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**The Transformation of
an Indian Labour Market :
The Case of Pune**

The Transformation of an Indian Labour Market :

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FOREWORD

The present study is an outcome of a very fruitful and long standing association of the Institute with one of the authors of this book, Professor Richard D. Lambert.

Professor Lambert was a Visitor at the Institute in 1956-57. He made an extensive survey of workers employed in 5 long-established, stable but mainly low-technology factories in Pune in 1957. The results of this survey were published in 1963 in the now classic case study in industrial sociology entitled, *Workers, Factories and Social Change in India*, also published in India by the Institute. During 1963, Professor Lambert resurveyed the same workers, painstakingly tracing those who had left the old factories; and during 1965, he conducted another survey, this time focussing attention on 13 factories in medium and high-technology industries which had rapidly developed in the Pune region during the period, again concentrating on those workers who had recently left their factories. This survey was supplemented by another one involving a sample of applicants for jobs in the 13 factories. The results of these three surveys are here pulled together for an in-depth analysis of the characteristics and motivations of the workers belonging to three segments of the labour market, the stayers, the leavers and the fresh entrants of a factory. This examination is conducted against the backdrop of rapid development of medium and high technology industries alongside the traditional, low technology industries in the region. The study thus forms a valuable addition to the relatively small number of labour market studies for India which have been carried out during the last decade or two.

Professor Lambert's has been a relationship of warm affection towards the Institute and of deep respect for its tradition. It is because of these sentiments that he expressed his desire to bring out an edition of the present monograph for the readers in India as a publication of the Institute. The book is being published by John Benjamins B.V. for the University of Pennsylvania. Dr. Lambert arranged to send for this purpose the negatives of the book for printing it here. We are grateful to Professor Lambert, and the co-authors of the book, Ralph B. Ginsberg and Sarah J. Moore for this. We are also thankful to John Benjamins B.V. for agreeing to allow us to publish this book as a publication of the Institute for the readers in India. We have great pleasure in publishing this important study.

Gokhale Institute of
Politics and Economics,
Pune 411 004 (India).
June 26, 1987

V.S. Chitre
Director

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Preface

The data were collected for this book while one of the authors, Richard D. Lambert, was a Visiting Professor at the Gokhale Institute of Politics and Economics in Pune, India, and it is the intellectual stimulation and good offices of that premier research organization in India that made this work possible. The purpose of many Gokhale Institute monographs, of which this is one, is to contribute to the empirical base for an understanding of, and the formation of public policy with respect to, Indian society. Accordingly, at the outset it may be helpful to place this monograph within the general stream of work on the operation of factory labor markets, particularly labor turnover and recruitment, in India.

During the colonial period, there was a long tradition of official reports on Indian labor conditions, particularly recruitment practices, absenteeism and worker discipline, largely growing out of official concern with some of the more rapacious practices of the British-owned plantations, mines, railways and factories in India. This tradition has continued after independence. Until recently, most non-government research on labor market behavior was carried out by economists.¹ During the first decades after independence, sociologists and anthropologists tended to confine their attention to matters such as caste, village structure, rural development, and, later, urbanization. From the mid-1950s onward, however, a substantial body of sociological research on Indian factory labor began to appear.²

¹ For a bibliographical periodical reporting current research on Indian labor, see the Republic of India, Labor Bureau, *Digest of Indian Labour Research*. The latest issue published is the third volume, covering 1968-1972. For a review of work by economists, see V.B. Singh and T.S. Palpola, *Labour Economics: A Survey of Research in India*, New Delhi: Indian Council of Social Science Research, 1973.

² For an annotated bibliography, see N.R. Sheth and P.J. Patel, *Industrial Sociology in India*, Jaipur: Rawat Publications, 1979.

Much of this work comprised general exploratory surveys of the social characteristics, occupations, work attitudes and other factory-relevant data collected by questionnaires from a sample of workers.³ To the extent that that literature dealt with labor market behavior, it seemed to concentrate on a single set of concepts that can be identified by the term 'commitment.' The term 'commitment' is shorthand for a cluster of notions about Indian factory labor that held that they had, as did workers in all developing societies, a low level of attachment to their jobs as evidenced by high absenteeism rates, high turnover, low morale, and a general lack of discipline in the factory. The reason for this was presumed to be that the village origins of the workers brought pre-modern attitudes and values into the factory where they inhibited the growth of an efficient, dedicated workforce. For some reason, this conception gained a great deal of currency in the general sociological literature about labor in developing countries.⁴ In India it showed up as early as 1931 in the report of the Royal Commission in India.

Whatever the historical accuracy of this conception – Morris D. Morris⁵ spent an entire chapter disproving this thesis in his study of the growth of the cotton textile industry labor force in Bombay – as the empirical studies in industrial sociology began to accumulate in the 1950s and 1960s, the data belied many of the assumptions of the 'commitment' hypothesis. A.K. Rice,⁶ in his study of an Ahmedabad textile mill, showed that absenteeism was not uniformly high among workers and was subject to reduction by changing

³ See, for instance, Richard D. Lambert, *Factories, Workers, and Social Change in India*, Princeton: Princeton University Press, 1963; M.N. Vaid, *The New Worker*, New Delhi: Asia Publishing House, 1967; N.R. Sheth, *The Social Framework of an Indian Factory*, Manchester: Manchester University Press, 1968; B.R. Sharma, *The Indian Industrial Worker*, New Delhi: Vikas, 1974; V.B. Singh, *Wage Patterns. Mobility and Savings of Workers in India*, Bombay: Lalvani Publishing House, 1973; and Mark Holström, *South Indian Factory Workers*, Cambridge: Cambridge University Press, 1976.

⁴ For the classic statement in this genre, see Wilbert E. Moore and A.S. Feldman (eds.), *Labour Commitment and Social Change in Developing Areas*, New York: Social Science Research Council, 1960; and James S. Stolkin, *From Field to Factory: New Industrial Employees*, Glencoe, Illinois: Free Press, 1960.

⁵ Morris D. Morris, *The Emergence of an Industrial Labor Force in India: A Study of the Bombay Cotton Mills, 1854-1947*, Berkeley, California: University of California Press, 1965, ch. 5.

⁶ A.K. Rice, *Productivity and Social Organization: The Ahmedabad Experiment*, London: Tavistock Publications, 1957.

the internal organization of the factory. V.B. Singh⁷ added that absenteeism varied considerably by industry and city. He further argued that village ties are not so extensive as formerly supposed, that patterns of leave-taking are not so unusual compared with factory labor elsewhere, and that, in any event, the forms of absenteeism and leave-taking common among Indian factory workers serve a very useful purpose in India's climate and industrial structure. Mark Holström⁸ reported that Indian factory workers on the whole behaved rationally in charting their work careers, much as workers in other countries would. Moreover, many of the case studies of workers in individual factories showed that a substantial portion of the workforce was urban, not rural, in origin, and that seniority, job orientation and job satisfaction are much higher than the early literature on 'commitment' would seem to indicate. In fact, some of the studies showed that a substantial portion of labor turnover occurs at the initiative of the owners, not the workers. Factory owners in a labor abundant market are able to retain a large portion of their workforce in temporary status, contracting and expanding the number of employees to suit the companies' needs. B.R. Sharma⁹ frontally assaults all of the components of the 'commitment' thesis in his own work with automobile workers as do N.R. Sheth¹⁰ and E.A. Ramaswamy and Uma Ramaswamy¹¹ at a more general level.

This focus on the notion of commitment in those years meant that many studies in industrial sociology in India that otherwise might not have dealt with some of the labor market relevant behavior of factory workers did so. However, the number of studies directed very specifically to job mobility or to the social structure of labor markets was small. One of the earliest ones was

⁷ V.B. Singh, *op. cit.*, pp. 46-55.

⁸ Mark Holström, *op. cit.*

⁹ . See Baldev R. Sharma's articles, 'The Commitment to Industrial Work: The Case of the Indian Automobile Worker,' *Indian Journal of Industrial Relations*, vol. 4 (July 1968), pp. 3-32; 'The Industrial Worker, Some Myths and Realities,' *Economic and Political Weekly*, May 30, 1970, pp. 875-78; 'The Blue Collar Workers, A Sociological Analysis,' *Economic and Political Weekly*, November 30, 1968, pp. 1877-1929; and 'Adjustment to Industrialism: The Indian Experience,' Jamshedpur: Labour Relations Institute, 1978, mimeo.

¹⁰ N.R. Sheth, 'The Problem of Labour Commitment,' *Economic and Political Weekly*, February 27, 1971, pp. 35-37. Also see the Preface to the second edition of his classic study *The Social Framework of an Indian Factory*, New Delhi: Hindustani Publishing Corporation, 1981.

¹¹ E.A. Ramaswamy and Uma Ramaswamy, *Industry and Labour: An Introduction*. New Delhi: Oxford University Press, 1981, ch. 2.

Morris D. Morris¹² historical study of the growth of the Bombay textile industry labor force. It sets out to counteract several widely held pre-conceptions about Indian labor markets. In particular, Morris found that the labor supply available to the Bombay textile mills was never inadequate to meet demand and that the workforce was relatively stable. He also argued that indiscipline was to a considerable extent a by-product of poor wage management. But his data, drawn as they were from official records and mill reports, could not deal with the behavior of individual workers; his units of analysis are very broad categories of workers and factories, and cover very substantial periods of time.

From the mid-1960s onward a set of studies concerned specifically with the sociology of labor markets *per se* began to appear.¹³ Interest in commitment faded and they were concerned with a much broader set of issues relating to the structure of markets and individual behavior. In terms of individual market behavior, for instance, R.N. Sharma's¹⁴ study of the job search behavior of workers laid off as a result of a closing of two textile mills in Kanpur focused on the different reactions of individuals when they were forced into the job market. P. Ramachandran¹⁵ dealt with the careers and motives for mobility of 1893 workers in five industries in Bombay and municipal employees.

In addition, a number of large-scale empirical studies were conducted which focused on the structure of the market, linking data from employers and workers. The one that in scale and approach most closely resembles our own monograph is T.S. Palpola and K.K. Subrahmanian's study¹⁶ set in Ahmedabad in 1970. Data provided by 1040 factories in Ahmedabad in 1970 is interlinked with information drawn from questionnaires administered to 1060 workers drawn from the same factories. The fundamental question Palpola and Subrahmanian explored is the effect of wage differentials on workers' market behavior, but in the course of their analysis a great deal of

¹² Morris D. Morris, *op. cit.*

¹³ For a thorough review of this literature, see Mark Holmström, *Industry and Inequality: The Social Anthropology of Indian Labour*. Cambridge: Cambridge University Press, 1984.

¹⁴ R.N. Sharma, 'Job Mobility in a Stagnant Labour Market,' *Indian Journal of Industrial Relations*, vol. 17 (April 1982), pp. 521-38.

¹⁵ P. Ramachandra, *Some Aspects of Labour Mobility in Bombay*. Bombay: Somaiya Publishers, 1974.

¹⁶ T.S. Palpola and K.K. Subrahmanian, *Wage Structure and Labour Mobility in a Local Labour Market*. Ahmedabad: Sardar Patel Institute of Economic and Social Research, 1975.

information is presented on recruitment practices, information networks, labor recruitment sources, and geographic and intra-factory mobility of different kinds of workers. The basic findings of the study match those in this monograph, particularly as they relate to what we will call the traditional labor market: geographic mobility is low; worker movement among companies is not tied to immediate wage gains; an expanding industrial base did not produce severe strains or stresses in the market — when more labor was needed, even skilled labor, it was available; there is a great deal of information available about job openings but access to them is discriminatory; there is relatively little fragmentation in the market — workers move across industries and occupations with ease.

Two of the issues that appeared in the Papola and Subrahmanian study show up in a number of other studies: the responsiveness of worker behavior in the market to wage incentives, and the compartmentalization of the market. A large scale study of the Bombay labor market conducted by Lalit K. Deshpande¹⁷ collected a great deal of information on the Bombay workforce in general. While it dealt with the role of wage incentives,¹⁸ the study was especially interesting for the light it cast on the issue of market compartmentalization. Deshpande drew samples comprising some 6000 workers from what he referred to as the organized, unorganized and casual workforces. He concluded that these markets were, while not watertight, essentially segmented; in fact, work in the casual and unorganized sector was an effective bar to employment in the organized sector.

The concern for market segmentation grew out of the natural expansion of the domain of labor market research to include the full range of employment, that is, what is called 'the unorganized sector' comprising individual, largely non-industrial, employment, and smaller-scale manufacturing units, not just the large-scale, organized sector of factory employment. The debate that ensued was whether there is a definable, bounded unorganized sector distinct from other forms of employment, and whether there is free move-

¹⁷ Lalit K. Deshpande, *The Bombay Labour Market*, Bombay: Bombay University, 1979, mimeo. This study is extensively abstracted in Mark Holström, *op. cit.*, pp. 183-97 and pp. 235-46. See also his article 'Changes in Participation Rates and Unemployment Structure in Greater Bombay, 1976-81,' in D.L. Narayana, S.K. Deshpande, and R.N. Sinha, *Planning for Employment*, New Delhi: Sterling Publishers, 1980, pp. 247-58.

¹⁸ Lalit K. Deshpande, 'Competition and Labour Markets in India,' in J.C. Sanderasa and L.K. Deshpande (eds.), *Wage Policy and Wage Determination in India*, Bombay: University of Bombay, 1970.

ment of workers between it and the more organized sector.¹⁹ The data of our own study indicate that the boundary between the casual, the unorganized, and the organized sectors was not so clear in what we will call 'the traditional' labor market, but tended to be important in the newer, more modern labor market.

In addition to the widening of the definition of labor markets, recent studies have extended the analyses to other parts of India,¹⁸ and have contributed a great deal of rich ethnographic detail providing a 'feel' for what is really happening in the labor market,²⁰ and mapping it more fully onto the society at large. This is a welcome supplement to the aggregate, quantitative analyses that tend to characterize questionnaire surveys such as ours.

How, then, does the present study fit into this general stream of literature on the sociology of Indian labor markets, how does it differ from others? First, it is based on extensive and articulated data collection both from factories and individual workers. Second, it brings to bear on the analysis of the labor market data from interlocking samples of workers: workers who leave a factory, compared with those who stay behind in the same factories; applicants for jobs compared with the sub-set of applicants who get hired and with the workers who leave the same factories during the same time period. Third, it compares two labor markets in the same urban setting separated by a few brief years. In the first there was a relatively stable workforce and the factories employed workers of low to medium skill levels, skills learned mainly on the job – a situation more typical of the early stages of industrialization. The other comprised a suddenly developing, massively expanding labor market of medium and high technology factories, many of them with foreign collaboration, a market in which the higher-level skills tended to be learned in formal educational settings rather than on the job. Fourth, attention is paid to both ends of the job change – leaving the old job and moving into a new one – as well as a detailed comparison between the

¹⁹ See, for instance, Jan Bremen, 'A Dualistic Labor System: A Critique of the 'Informal Sector' Concept,' *Economic and Political Weekly*, November 27, 1976, pp. 1870-76, December 4, 1976, pp. 1905-8, and December 11, 1976, pp. 1939-44; also Heather Joshi, 'The Informal Urban Economy and Its Boundaries,' *Economic and Political Weekly*, March 29, 1980, pp. 638-44.

²⁰ See Mark Holström, in both his monograph on *South Indian Factory Workers* and his *Industry and Inequality, The Social Anthropology of Indian Labor*, especially Chapter 5; John Harriss, 'Character of an Urban Economy: 'Small Scale' Production and Labour Markets in Coimbatore,' *Economic and Political Weekly*, June 5, 1982, pp. 945-54 and June 12, 1982, pp. 993-1002; Klaas Van der Veen, 'Urbanization, Migration, and Primordial Attachments,' in S.D. Pillai and C. Bak (eds.), *Winners and Losers: Styles of Development in an Indian Region*, Bombay: Popular Prakashan, 1980, pp. 43-80.

jobs themselves. Special attention is paid to those moving in and out of the job market and to those entering and leaving the factory sector. Fifth, an attempt is made to describe the characteristics and size of an offering labor pool, that is, how large and what are the characteristics of applicants who present themselves for employment. Sixth, most of the attention in the analysis is paid to the correlates, causes, and intervening variables that determine individual decisions to change jobs, and similarly, determinants of what happens to workers as they move from one job to another. The explanatory variables are drawn from the social characteristics of the workers, their position and experience in the old factories, and what actions they take in the market both in the change that occurred at the time of the study and in their previous job changes. Seventh, all of the sections attempt, through multivariate analyses, to distinguish apparent relationships from those that have some statistical significance, and to identify those whose effects are robust enough to still appear to be important when many other confounding variables have been held constant.

In closing, we would like to express our appreciation to the Gokhale Institute of Politics and Economics for its support in making this study possible, in particular to Dr. N.V. Sovani whose encouragement, patience, and wise advice kept the project moving ahead on the many occasions it was shunted aside. We also want to thank Sri R.P. Nene who managed with superb skill the highly complex data collection process. Above all, we are grateful to the factory managers, personnel officers, and workers who gave us their time and cooperation. Financial support from the American Institute of Indian Studies, the National Science Foundation, and the University of Pennsylvania is gratefully acknowledged.

Richard D. Lambert
Ralph B. Ginsberg
Sarah J. Moore

Philadelphia, Pennsylvania
April 1985

Chapter I

The Problem and the Data

This book presents the results of a series of studies of the labor market in Pune, a medium-sized city in India. In the seven-year period over which these studies were carried out, Pune was transformed from a quiet administrative and educational center with a few isolated, relatively low-technology factories, employing mostly unskilled and semi-skilled laborers, into a major manufacturing city with a substantial number of large-scale factories producing a diverse set of products, requiring high technology and a skilled work force. At the same time, the city was undergoing a spurt of rapid growth. The population of what is referred to as the Pune urban agglomeration was 648,111 at the census of 1951, and had grown to 814,452 by 1961 and 1,156,072 in 1971, an increase of 25.7% for the first decade and 41.9% for the second. If there ever was a mix of rapid industrialization, and rapid urbanization, this was it.

Pune, then, provides an interesting laboratory for studying the shift in labor market conditions often assumed to characterize industrial development and modernization — a shift from a relatively stable, high-supply low-demand, low-skill, locally recruiting, low-wage labor market to a dynamic one characterized by explosive demand, particularly for highly skilled labor, high turnover, and high wages, and drawing workers from an ever-widening circle of external markets. What we found was change, to be sure, especially in the social quality of the work force and in the occupational specificity of the market but at the same time there was a surprising amount of continuity in search mechanisms, worker orientation, and mobility decisions once the changed conditions had been duly taken into account.

Although the studies reported here are responsive to and grew out of the now vast literature on development and modernization, the aim is not to test any particular hypothesis or to vindicate any particular disciplinary approach. Occasionally, attention will be drawn to the extent to which these micro-data seem to support or controvert macro-theory. However, in the main the point is to describe, as broadly and as comprehensively as possible, how one group of actors in the market, namely the labor force itself, behaved in leaving old jobs and searching for and taking new jobs, as opportunities and constraints changed around them. Since there is no comparable information on the behavior of Indian workers in the labor market, the data are presented in greater detail and greater fullness than otherwise might be called for.

Experience with the earlier study indicated that it was often specific facts that were extracted and used by other scholars, rather than the more general conclusions. Moreover, as Merton so aptly argued, the more theoretically oriented research, not to speak of the espousal of any specific policy, must wait on just such 'preparation of the phenomena.'

Data Sources

The data on which the inquiry is based derive from four interlocking questionnaire studies fielded between 1957 and 1965, supplemented by data from factory records, statistical series, and interviews with informants conversant with the changing local setting. The first study consisted of an extensive questionnaire administered in 1957 to 821 of the 4,249 workers who then comprised the entire work force of the five privately owned factories in Pune employing over 100 workers.¹ These data provide a baseline for determining pre-growth conditions in Pune and, at the level of the individual workers, the initial conditions against which the causes and consequences of occupational mobility are to be judged. Of the five factories studied then, three were essentially low-technology, relatively labor-intensive processing plants turning one or a few simple raw materials into consumer products: biscuits and chocolate, paper products, and rubber goods. Another was a traditional cotton textile mill with a machine and work force organization typical of the early twentieth century, colonial-period mill style. A factory manufacturing diesel engines was the only one with a more modern, relatively high-technology complement of machines and workers. Since this was largely an exploratory and descriptive study, a great deal of information was collected on the workers' personal characteristics, family setting, work history, position in the factory, and attitudes toward factory work in general and the particular factory in which they were employed. The factories, listed by product and sample size, are given in Table 1.1.

The second study was concerned with the labor market experiences of workers in the old factories during the period of rapid growth (1957-63). It consisted in the first instance of a determination of who had left the old jobs by 1963, and then a follow-up questionnaire for the movers exploring what had happened in the interim. We went back to the same companies, located

¹ Richard D. Lambert, *Workers, Factories and Social Change in India*. Princeton: Princeton University Press, 1963.

the files of 818 of the workers in the original sample – the textile mill could find no record of the other three – and determined who had left and who was still employed. For the leavers, it was further determined when they had left, why they had left – according to company records – what job and wage they had held prior to departure, what their severance pay was, whether there was any record of company or workers' complaints in the file, and what their last known address was. In all, 290 workers who had been employed in the five factories in 1957 were no longer employed there. Twelve had died while still employed in the factory. With this information, the rest of the workers who had left were traced. It was ascertained that another 16 had died between leaving the factory and the time of the survey. Another 35 – a remarkably small percentage – could not be found. The remaining 227, 87% of those believed to be still alive, were located through company records, or by asking kin, friends, postmen, or fellow workers. In some cases, the search led to distant parts of India. Table 1.2 indicates the distribution of workers in the sample in the 1963 resurvey.

Once a worker was located, he was interviewed in person regarding his version of the reasons for his departure, what his last pay was, and whether it was enough to support him until his next job, how he went about looking for a new job, how long it took him to find one, what kind of job it was, and how it compared with the old one, both objectively and according to subjective criteria.

The remaining two studies were concerned with workers in 13 of the new group of 85 modern factories representing the sudden surge of high-technology manufacturing in the Pune region. Except for the textile mill and the engine factory, which were included for comparative purposes, these new factories had all been established within the previous six years. They

TABLE 1.1
1957 Study Sample

Factory	Total Workers	Sample Size
Textiles	2342	251
Paper	603	154
Engine	614	150
Biscuit	159	128
Rubber	<u>531</u>	<u>138</u>
TOTAL	4249	821

TABLE 1.2
1963 Resurvey Sample

Factory	Stayers	Not Found	Died in Factory	Interviewed	Total
Textiles	159	22	7	60	248
Paper	71	9	2	72	154
Engine	112	4	2	32	150
Biscuit	104	6	0	18	128
Rubber	<u>82</u>	<u>10</u>	<u>1</u>	<u>45</u>	<u>138</u>
TOTAL	528	51	12	227	818

were all high- or medium-technology plants: privately owned, many of them with foreign collaboration; large-scale, employing more than 100 workers; and concentrated in the manufacturing of machinery or electrical equipment. Even the sample from the textile mill, included for purposes of comparison, in the new study was drawn from the newly established division of the plant that manufactured textile equipment, rather than the traditional section producing cloth included in the old study. Of the 13 factories chosen for the sample, four manufactured machinery — engines, air compressors, textile machinery; three made machine tools; three made electrical equipment ranging from x-ray machines and precision instruments to electric fans; two made electrical wire and cable; and one manufactured motor scooters. Hence all these factories were competing for roughly the same kind of skilled work force, largely metal workers — grinders, borers, turners, fitters, welders, tool and die makers, and so on. Moreover, they were all rapidly growing firms, they had experienced an increase in work force of more than 100% between January 1961 and September 1964, when the sample was drawn. Together, they employed 7,699 workers at the time of the survey, or about 13% of the total number of workers in large-scale manufacturing establishments in Pune.

The third data set (Study III) was designed to parallel data for the leavers in Study II. It was comprised of all workers who had quit or been discharged from one of the 13 companies between January 1 and the end of April 1965. Once again, company records were examined for the official version of employment and departure, and the departees were sought out and interviewed, using a modified form of the same questionnaire administered to those who had left the older factories. In contrast to Study II, where workers

might have been interviewed as long as six years after leaving the 1957 factory jobs, those leaving the new factories were interviewed quite soon after departure; indeed, many were still involved in terminating negotiations with the old factory. As a result, returned forms were secured from all but a few – about a dozen or so, depending upon how they are counted – of the departees. Table 1.3 identifies the new factories by the product manufactured, and indicates for each the year of establishment, the total number of workers employed, and the number of workers leaving during the three months of the survey.

TABLE 1.3
New Factory Sample of Leavers

Factory	Date Established	Number of Workers	Number of Leavers
Textile Machinery	1958	239	37
Oil Engines	1948	1876	37
Tungsten Drills	1961	231	15
Machine Tools I	1961	634	54
Machine Tools II	1961	603	11
Heavy Electricals	1963	224	8
Electric Fans	1960	942	42
Motor Scooters	1962	807	106
Scientific Electricals	1957	420	10
Insulated Wire	1962	187	12
Diesel Engines	1964	320	42
Air Compressors	1958	829	49
Cables	1962	<u>387</u>	<u>11</u>
TOTAL		7699	434

The fourth set of data (Study IV) rounded out the information about the labor market affecting the new factories. It focused on the pool of job applicants these factories could tap to fill their requirements, that is, the offering labor force of those seeking employment in new factories. The study sought answers to such questions as, how did workers applying for jobs distribute themselves among the factories, and did these distributions bear any relation to the stated needs of the factory? Was there evidence for a labor shortage in

general or with respect to particular skills? Did workers move from the old to the new factories, and did they circulate among the new factories? Was the new labor market attracting new or different kinds of workers, and was it reaching outside Pune to do so?

The personnel officers of each of the factories supplied the name and address of every person applying for a job — by mail, by telephone, or through another worker or acquaintance — from March 15 to May 1965. Each applicant was then sent a questionnaire to be returned to the company office along with his application for a job. Since the questionnaire was linked to the regular process of job application, all job candidates provided data. In addition, on eight randomly chosen days, interviewers were stationed at the gate of each company to interview applicants who appeared without notice, for, during the questionnaire pretest, it was discovered that, after job candidates had been interviewed at the gate on one day, on consecutive days the local grapevine carried the news of what seemed like a very formal application process. Hence large numbers of potential applicants appeared at the gate on the second day. By coming at unannounced and varying time intervals at the different factories, the interviewers minimized this inflation. All factories were, however, visited the same number of times, with an equal mix of days of the week. The gate applicants thus essentially represented a one-seventh sample of the total number of those applying at the gate during this period. All duplications within each factory were deleted, and if an applicant showed up in both the mail and the gate sample, he was counted only in the mail category. Those who applied for several factories were counted in each of the factories to which they applied. Finally, it was determined which of the candidates were actually hired. Once again, this sample is virtually complete for the period covered.

In Table 1.4, columns 1 through 4 present for each factory the number of mail applicants, gate applicants, applicants hired, and the sample total. Column 5 presents the estimated total number of applicants, derived by multiplying the number of gate applicants by seven and adding this to the number of mail applicants and applicants hired.

These four studies, then, provide a series of interlocking measures of various aspects of the labor market in Pune. They cover those who stayed in or left the older factories, those who left a newer set of factories, and those who applied to or were hired by the new factories. Together, they indicate what processes were occurring during the period of rapid growth and how this affected the individuals involved.

TABLE 1.4
Types of Applicants in New Factories

Factory	Mail	Gate	Hired	Total Sample	Estimated Total Applicants
Textile Machinery	15	25	17	57	207
Oil Engine	196	11	35	242	308
Tungsten Drills	93	4	20	117	141
Machine Tools I	25	13	5	43	121
Machine Tools II	37	24	9	70	214
Heavy Electricals	18	5	6	29	59
Electric Fans	54	29	26	109	283
Motor Scooters	88	42	57	187	439
Scientific Electricals	43	18	2	63	171
Insulated Wire	13	18	12	43	151
Diesel Engines	28	77	38	143	605
Air Compressors	106	22	30	158	290
Cables	47	18	9	74	182
TOTAL	763	306	266	1335	3171

Data Coverage and Analysis

In the following chapters, the analyses of the four samples will be presented *seriatim*: (1) those leaving the old factories, the five factories in the 1957 sample; (2) those leaving the new factories, the 13 factories in the 1965 sample; (3) those applying for jobs in the new factories; and (4) those actually hired into those factories. Throughout the presentation an attempt will be made to relate the findings of each survey to the preceding ones and, where appropriate, to external data for all of Pune, for Maharashtra, or for India.

Of the data available on each worker, the fullness of coverage and degree of detail vary from survey to survey, depending on the purposes for which they are used. But the same types of information are available for each worker in each study. Many variables span all the studies, and, in any particular study, a variable will generally be presented in the same format as in the others. Since much of the analysis concerns the correlations between variables, special attention should always be given to what is and is not covered in each study. The next chapter will define each variable more fully,

but here only the basic classes are noted, with some key instances and some indication of how they will be used in the analyses that follow.

In general, the variables fall into six broad classes:

1. **Social Characteristics.** Caste and community, education, sex, age, family background, migrant status, mother tongue, command of English.

2. **Work History.** Number of previous employers; duration of previous employment; industrial category of previous employers; occupation within that industry; periods of unemployment; work experience on a farm, or in another factory; temporary/permanent status; previous wages; location of previous employment.

3. **Job Leaving.** Circumstances of leaving the old factory — quit or discharge, reasons, and whether subject for dispute; amount of severance pay; adequacy of severance pay for support during subsequent job search.

4. **Job Search.** Search strategies — response to an advertisement, written application, gate application, registration with the employment exchange, help from friends or relatives; scope of search, whether confined to Pune, or to some type of previous occupation; applications to more than one factory; duration of job search; advantage of previous factory experience.

5. **Attitudes.** Attitudes about old and new jobs with reference to company management, immediate supervisors, fellow workers, and working conditions; satisfaction with actual work, wage setting, and promotion policy; mobility aspirations; preference in a job change for wage maximization, advancement, or job security; family's attitude toward the job.

6. **Process and Outcomes of Job Change.** Withdrawal from the labor market; re-employment in another factory, in or out of Pune; change of residence; distance between employment and residence; carryover of occupation, in the event of a job change; carryover of skills, in the event of an occupational change; gain or loss in wages.

In the following analysis of the study data, these variables will be utilized in two different ways. First, taking one variable at a time, the general characteristics of the old and new labor markets can be described and contrasted. For the studies of leavers, this will include turnover rates, and for applicants, the relation of supply to demand. In addition, for all the studies, the analysis will consider the extent to which the market was localized or dispersed; whether it tended to be occupation-and-skill-specific, or whether job change meant a complete change of occupation; the amount of movement in and out of the job market, or in and out of the factory sector; the social quality of the workers in the market; the mechanisms of job search and the rapidity with which job exchanges were accomplished; and the extent to which job changes seem to have been accompanied by job improvement, including wage gains.

While the first form of analysis focuses on markets as a whole and the experience of workers generally as they left or applied for jobs, the second form explores the behavior, motivations, and conditions of the individual workers in the market. Here, differences between types of workers become important with analysis focusing on such questions as: what distinguished those who left or stayed in a factory, dropped out of the labor market, remained in the factory sector, moved out of Pune, got jobs more quickly, moved to jobs they liked better, carried over skills or gained in wages in the transfer, and so forth.

Analyses of the market as a whole and of the fate of particular individuals within it are, of course, closely connected. Within each study, then, the findings from the two styles of analysis will be interrelated. For example, what happened to particular types of individuals will be an important point of contrast between the old and new markets as a whole. Similarly, variables predicting the different forms of worker behavior can and do vary from one study to another, and such selectivity contrasts are important features of shifting market conditions.

In keeping with the exploratory emphasis of the research, the data have been described as comprehensively and as parsimoniously as possible. Extensive numerical data will be presented in both the aggregate market and the individual predictive analysis. More methodologically oriented readers will note, however, that, despite the potential complexity of the issues, only the most straightforward and familiar techniques are used. In the discussion of the aggregate aspects of market characteristics, the methodological concerns tend to be limited to the comparability of classifications or data sources, or how particular rates were estimated; the estimates themselves are simply means and frequencies.

The most elaborate statistical analyses will be directed largely at the selectivity questions, what kinds of individual workers did what. The form of analysis will be fairly standard. Individual aspects of job change, the sixth category of variables, *e.g.*, leaving the factory, transferring skill, gaining in wages, will be examined to see which of the variables in the other categories were the most efficient predictors of that kind of behavior. These analyses will first be presented in the univariate form showing the relation of each variable individually to the job change feature. Then the familiar technique of ordinary least squares (OLS) regression and logit regression will be used to control for spurious relationships and to assess the net effects of many factors simultaneously. The logic and style of presentation of these various forms of numerical analysis will be explicated fully as the data are presented in the next chapter, and will then be used in the same fashion throughout the remainder of the book.

The simplicity of the analytic methods should make the results of the study accessible to as wide an audience as possible, although that was not our primary reason for employing them. As a matter of fact, in the course of the analysis, many 'complex' and 'sophisticated' techniques were used in the hope of teasing out of the data deep and thought-provoking relationships and establishing causal connections not apparent to the unschooled eye; several of these methods are noted in Appendix A. But, as it turned out, no matter how powerful the methods employed, the results were never really different from those which will be reported in this book.

Chapter II

Leaving a Job in the Old Labor Market

For reasons that are difficult to fathom, the notion that factory workers in developing societies are not sufficiently committed to their jobs has been a central theme in almost every study in industrial sociology undertaken in India. Since it was first introduced in the general literature on development in the 1950s,¹ the examination of evidence for this presumed lack of commitment has been among the standard theoretical underpinnings of almost every conceptual essay or case study dealing with Indian factory labor. The reason for the surprise at the concept's durability is that, uniformly, there is very little evidence for a lack of commitment. Indeed, in the detailed analysis of the five factories which provided the baseline for the current research, an entire chapter was devoted to marshaling evidence contrary to the notion of worker undercommitment, and it was concluded that the concept was largely irrelevant to the Indian industrial situation.

The evidence in the earlier study which belied the low commitment hypothesis was largely indirect. In the first place, average seniority in the factories was high: the median seniority in all the factories was 8.5 years. However, as a comparison of worker seniority levels in the five companies indicated, the real determinant of seniority differences was the growth trajectory of the company's total labor force. That is, worker seniority reflected the periods of major factory expansion, and not worker preferences. Three of the factories — textile, paper, and biscuit — had been established for a long period of time and were relatively stable in the size of their work force. The median seniority of the workers in the textile mill was 9.4 years: in the paper mill, 14.6 years: and 8.1 years in the biscuit factory.

The second kind of indirect evidence was the fact that in order to guard themselves against the dislocations of high turnover, all the companies surrounded their core work forces, what they called permanent workers, with a buffer group of temporary workers of about 15% of the total work force, who were available as replacements either at a daily muster, in the case of the textile and the paper mills, or on demand in the case of the other companies. Depending on the factory, this fringe of temporary workers was

¹ See, for instance, Wilbert E. Moore and Arnold S. Feldman, *Labor Commitment and Social Change in Developing Societies*, New York: Social Science Research Council, 1960.

employed for a substantial portion of each working month. Indeed, only in the textile mill, where a large group of badlis waited on a seniority list to fill in for daily absentees, did the average number of days worked per month by temporary workers dip below 24, and in the textile mill the badlis worked on an average of 18.4 days a month. The availability of workers willing to remain in this employment limbo is a testament to the abundant supply of available labor. The length of time they were required to remain in this indeterminate status testifies to the relative stability of the core work force. In three of the factories, over half of the workers had been in temporary status for longer than a year, and in the case of the paper mill, the median seniority for temporary workers was more than three years. Table 2.1 displays several features of the temporary worker system in the five factories: the percentage of the total work force that was temporary, the mean number of days worked by temporary workers, their median months seniority as temporary workers, and the percentage of all temporary workers who had held seniority status for more than a year.

TABLE 2.1
Temporary Workers in the Old Factories

	% Temporary Workers	Mean Days per Month Worked	Median Months Seniority	% Seniority More Than One Year
Textiles	18.2	18.4	16.8	55.0
Paper	14.4	24.3	39.4	94.9
Engine	14.0	24.2	12.0	54.9
Biscuit	16.6	24.8	6.3	5.0
Rubber	10.7	25.6	6.0	—

To the extent that a lack of commitment was reflected in relatively high turnover, the evidence from the baseline study indicated that the work forces were relatively stable. The real signs of undercommitment were on the part of management to the worker rather than the worker to his job. However, this evidence was at best indirect. Evidence from the new study allows a much more direct examination of worker stability as the discussion turns to the first form of analysis outlined in Chapter I: the question of overall character of what will be called the old labor market. What can be said about the amount of turnover taking place in the old Pune factories? How did it compare with turnover in factories elsewhere? Was it erratic or fairly steady?

Did the factories differ very much among themselves? Would the picture change if confined to quits rather than to all separations?

First, how many workers left the old factories during the period 1957 to 1963, the seven years intervening between the two studies? As indicated earlier, 290 workers out of the original cohort of 818 had left the five original factories during the period, a little more than a third or 35.5%. Twelve workers out of the original sample had died while still employed in the old factory, so that live separations were 34% of the original cohort of 818. This rate varied somewhat among the factories, ranging from a high of 53.9% separations in the paper mill to 18.8% in the biscuit factory, with the rubber factory (40.6%), the textile mill (35.9%), and the engine factory (25.3%) in between. While the loss of so substantial a portion of the original cohort may seem to indicate a high degree of instability, in fact, when these losses are reduced to annual and quarterly rates and compared with turnover figures elsewhere, they are quite low.

It is, of course, difficult to compare what might be called a cohort attrition rate, that is, a reduction without replacement of a baseline work force over time, with a turnover rate of a work force that is constantly adding new members. For one thing, turnover during the early years of employment is usually considerably higher than among those who have worked in a factory for some time. This was so in these factories as well. Taking just the first year after the completion of the baseline study and only those workers who at that time had one year or less seniority, the separation rate was 17.2%, compared with the overall separation rate among all workers for that year of 5.5%. Hence the cohort attrition rates which will be presented probably underestimate turnover as it is usually calculated — all separations as a percentage of total work force in a brief period of time, usually a month or a quarter. However, that underestimation is not likely to be very great. For one thing, the proportion of workers who were in their first year of employment was less than 10% in 1957, and adjusting the rates in subsequent years to introduce constantly a new high-turnover group of new employees would only increase the overall rate in each year by 0.1%. Second, the mean cohort attrition rate did not vary very much from year to year (Table 2.2), and the trend was not consistently downward as might be expected if the non-replacement factor were of major importance.

Were these rates high or low? Was the labor force usually unstable as the low commitment theory would suggest, or was it unusually stable as the indirect evidence of the baseline study implied? Table 2.3 compares the attrition rates for this cohort with the estimated mean monthly rates for the specific industrial categories of the sample factories and for all industries. Both the U.S. rates and the Pune rates are derived from an average of the

TABLE 2.2
Annual Cohort Attrition Rates per 100 by Factory, by Year

Year of Separation	Textile		Paper		Engine		Biscuit		Rubber	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
1957	11	4.4	7	4.5	7	4.5	7	5.5	13	9.4
1958	12	5.1	7	4.8	5	3.5	3	2.5	13	8.0
1959	18	8.0	7	5.0	16	11.6	1	0.8	3	2.7
1960	20	9.7	33	24.8	5	4.1	1	0.8	7	6.4
1961	11	5.8	15	15.0	1	0.9	6	5.2	8	7.8
1962	10	5.7	4	4.7	1	0.9	2	1.8	6	6.4
1963	7	4.2	10	12.3	3	2.6	4	3.7	6	6.8
Total/Mean	89	6.1	83	10.2	38	4.0	24	2.9	56	6.8
Median		5.7		5.0		3.5		2.5		6.8
% All Separations		35.9		53.9		25.3		18.8		40.6

All Factories

No.	Mean Rate
45	5.5
40	5.2
45	6.1
66	9.6
41	6.6
23	4.0
30	5.4
290	6.1
	5.5
	35.5

TABLE 2.3
**Mean Monthly Separations per 100 Workers by Industry
 in Pune, All-India, United States**

	Textiles	Paper	Engine	Biscuit	Rubber	All
Pune (1957-1963)	0.5	0.8	0.4	0.2	0.6	0.5
All-India (1963)	2.3	1.7	2.3	5.3	2.4	2.8
United States (1957-1963)	3.6	2.7	3.1	5.5	3.3	3.6

TABLE 2.4
**Quit Rates by Industry,
 Pune Samples (1957-63), All-India (1963), United States (1963)**

	Quit Rate		
	Old Factories	India	United States
Textiles	.28	1.0	1.9
Paper	.14	1.2	1.1
Engine	.23	1.7	1.0
Biscuit	.08	1.4	1.8
Rubber	<u>.32</u>	<u>1.6</u>	<u>1.4</u>
TOTAL	.21	1.38	1.44

annual rates from 1957 to 1963. The all-India rate is for a single year, 1963, the year of the resurvey.

The overwhelming impression these figures convey is one of relative stability, compared with American figures or with all-India figures. However, before concluding that the old labor market was marked not by low commitment on the part of the workers but by a tendency to stay with a job longer than might be expected according to experience elsewhere, it is necessary to see whether shifting from total separations to quits changes this picture. After all, commitment in the usual sense of the term relates to an attitude on

the part of the worker. As indicated in the earlier study, and by the discussion here of the characteristic fringe of temporary workers by which companies maintained the capacity to adjust the size of their labor force to fluctuations in consumer demand for their product, there is such a thing as low company commitment to an employee as well as low worker commitment to a job. Confining the comparison to quits, or separations at the worker's initiative rather than at the company's — it will be discussed below whose word should be taken, but at the moment, this, like all other studies, accepts the company's version of the voluntariness of the separation — then do these work forces seem more or less stable than others elsewhere? Table 2.4 provides the quit rates for the five Pune factories and compares them with the equivalent rates for Maharashtra and India as a whole and the United States.

Once again, the evidence is that the Pune factory work forces were relatively stable. These data reinforce the analysis of the baseline study. This labor market was not marked by low worker commitment, at least to the extent that staying in the factory was an indication of commitment. And leaving aside the question of commitment, the labor market described here is one characterized by relatively slow turnover and a general tendency among workers to stick with factory jobs once they got them. This very general characteristic of the market serves as a context for the selectivity question that follows naturally upon it, what kinds of workers did leave these factories, and what led to these separations?

Who Left and Why

Much of the scholarly literature which attempts to assign motivations to individual companies and workers for turnover uses as evidence overall rates and their correlates in situational or company characteristics.² However, turnover rates and their correlates are, at best, one step removed from the company and individual choices that are the real substance of turnover. One of the major advantages of micro-studies such as these is that they can determine at the individual level who left the company and who stayed, and put together the views of the company and the worker as to why those who left did so — the selectivity of the turnover and the motivations that gave rise to it. Following sections will be concerned with what happened to workers

² James L. Price, *The Study of Turnover*. Ames, Iowa: Iowa State University Press, 1977.

after they left the old factories, whether and how they went about looking for a new job, and what kind of jobs they got. This section will be concerned only with the act of leaving a job and the events and circumstances leading up to it.

In this section, the variables used to examine the first selectivity question, who left and who stayed, cover five of the six categories mentioned in Chapter I.

The first block represents the social characteristics determining the individual's general standing in the society: sex, age, caste or community, literacy, education, and place of origin. Caste and community are presented in a truncated form, collapsing into a few categories the full enumeration presented in the original study. The Brahmans and Marathas, the latter the dominant agricultural caste of Maharashtra, are given separately. The Untouchables or, in their Gandhian name, Harijans, include both the Scheduled Castes and Tribes. 'Intermediate' refers to all the other Maharashtra-based castes arrayed in ritual rank between the Marathas and the Harijans. The term 'other' refers both to people belonging to another linguistic region, such as Bengalis, Gujaratis, and Tamils, and to non-Hindu religious groups, such as Muslims, Parsis, and Christians. The many individual castes and communities gathered under these broad rubrics can be seen in the Appendices of the 1957 study. To the extent that there is a hierarchy — and these days the relevance of such a hierarchy is problematic, particularly in the modern sector of the society — it progresses from Brahmans through Harijans. The fifth group, the 'others,' are not really the same kind of hierarchical category. Throughout, when dealing with the caste groups, this study will treat them like discrete ethnic groups, with little or no attention to their ranking. An exception will be made in contrasting what happened to Brahmans with what happened to Harijans, where differences of rank are extreme.

The educational divisions reflect the divisions in schooling commonly recognized in the society. There is a quantum jump in social status with the passing of the matriculate examination, equivalent to achieving a high school diploma 40 years ago in the United States. In this sample, higher education — matric and above — was still uncommon. Literacy, particularly literacy in English was a major divider. The substantial body of technically educated workers so prominent in the newer factory samples had yet to appear.

The family variables, in addition to the worker's own marital status, relate in the main to the size of the household and its economy — whether the wife worked, the number of earners in the family, the number of non-working dependents per earner, and the household's general economic status measured by per capita income. These variables might have affected

turnover in two ways. First, a worker with dependents and no other earners might have been reluctant to risk a job change without another job in hand. Second, a household with resources could have served as a cushion allowing the worker to take the risk of changing jobs, and could, perhaps, have given him the personal contacts to find another job more easily.

The second block of variables relates to the worker's job history before employment in the sample factory. Were those for whom the job was a first job, or a first factory job, more or less likely to leave it? Were people who had worked only in Pune more likely to remain in the factory than those who had been employed elsewhere? What had been the experience in the labor market of those who left, and did it make any difference in the likelihood of their staying or leaving? For instance, when they were looking for the job they had just left, did finding it seem easy? Did they in fact get that job quickly once they began to look for it? Since the start of their working careers, did they ever have a period of unemployment when they could not find a job even though they looked?

The third block of variables relates to the job search strategies followed by workers seeking employment in the old factories. Did they answer an advertisement, file a written application, register with the unemployment exchange, or get assistance from a union, a relative, or a friend? One might expect those with a longer and more successful experience in the job market to be more willing to try their luck in another job change, and those who used the formal mechanisms of job search successfully before to be more confident of finding another job if they needed one.

A fourth set of variables fixes the workers in the jobs they occupied in the sample factory. First of all, to which of the five factories did they belong? Within that factory, were they part of the clerical or supervisory staff, or did they belong to the general production and maintenance work force? What was their general position in the factory as measured by the skill level of their occupation and their basic wage? Were they part of the general cadre of permanent workers, or were they among the 20 percent or so in each factory with only temporary job standing? And was the length of service in the company a good guide to how likely a worker would be to leave?

A fifth set of variables has to do with the workers' general attitudes toward the work and the job market. Were those who left more likely to think that finding a new job would be relatively easy, or difficult? Did they prefer a job that guaranteed permanence of employment, or would they rather have a job with higher pay or a greater chance for personal advancement? Did their personal aspirations include promotion to the rank of supervisor, or did they think that the chances for such upward mobility were slim? How important did they think influence (*vasīlā*) was in getting a job

and being promoted? If they were retrenched, would they actively seek a nonfactory job before accepting another in a factory? How urban-oriented were they? When they retired, would they continue to live in the city? Were industrial and urban commitments related? One might expect greater mobility of those workers who had the most confidence in their ability to find a new job: who sought pay or advancement over job security; who were ambitious enough to see a supervisory job in the future; who were committed to urban life; who liked the factory as a work place and believed that places in the factory were gained through individual merit rather than connections.

The final set of variables measures: (1) the worker's attitudes toward factory work and the labor market in general and (2) his satisfaction with the particular company and job he held in it. It must be recalled that these satisfaction measures refer to the situation as of 1957, while the workers' departures from the jobs in the sample companies stretch from 1957 to 1963. Nonetheless, it is interesting to consider whether it was the least or the most satisfied workers who left or were made to leave. Was the company getting rid of the malcontents, or was it losing the loyalists? The attitude measurements comprised a set of positive and negative statements about the company's or its officers' behavior as perceived by the worker. In addition, an overall Likert scale measuring general job satisfaction was constructed out of the workers' agreement or disagreement with statements praising or condemning the company in varying degrees. And a final attitudinal question ascertained the degree to which the worker's family, as distinct from the worker himself, thought he had a good job.

Separations Predicted by One Variable at a Time

Given this wide assortment of variables, the seemingly simple question of who left is not quite as simple as it seems. It will have to be answered in at least three different ways, each demanding a different style of analysis, and the answer chosen depends upon the use to which the information is to be put. The most straightforward way to respond to the question is merely to sort the stayers and leavers into two groups, and compare the two groups variable by variable. Each such comparison permits a crude test of a particular hypothesis about what determined turnover. For instance, were the educated or the married more likely to leave, or were those who had a history of changing jobs more likely to leave than their more stable counterparts?

The results of such a procedure are presented in Table 2.5. The first

column indicates the number of workers with each characteristic in the total sample, omitting the 12 who had died in the factory. The second column indicates the proportion of workers in that category who left the factory at some time during the seven-year interval from 1957 to 1963. If the question is whether Brahmans were more likely to leave than other caste groups, the 26.3% departure rate of Brahmans can be compared with the overall rate of 34.5% leavers, or with the rates for any of the other caste groups, *e.g.*, 43.9% among Harijans. Asterisks next to the number in column 2 indicates that the difference in the percentage of leavers on that variable is greater than one would expect by chance if all of the categories had the same rate: one asterisk indicates that the difference is significant at the .05 confidence level; two asterisks, at the .01 level. These figures can easily be transformed to give the proportions of the workers in each category among those leaving the old factories and going back on the job market and those staying, although this way of looking at the association would reverse the direction of causality. Taking the example of the Brahmans, 26.3% of 227 indicates that there were 60 Brahmans among those leaving the factories, and 60 out of the 278 total leavers in the sample indicates that 21.6% of the leavers were Brahmans. Similarly, 64 out of 278 of the leavers, or 23.0%, were unmarried. In subsequent analyses we use this way of looking at the data to constitute a cross-sectional profile of those leaving the old factories under varying circumstances and seeking new jobs of various types.

TABLE 2.5
Variables Distinguishing Stayers and Leavers

	Number	% Leavers
Total Sample	806	34.5
Social and Family Background		
Caste		
Brahman	228 ^a	26.3 ^{**}
Maratha	237	38.4
Intermediate	148	28.4
Harijan	82	43.9
Other ^d	111	44.1 [*]

Social and Family Background (cont.)

	Number	% Leavers
Education		
No Education	200	39.5
Up to Fourth Standard	199	33.7
Up to Seventh Standard	157	30.6
Up to Tenth Standard	119	30.3
Matric or SSC	84	29.6
Technical below BA, BSc	24	54.2*
Graduate	23	39.1
Post Graduate	3	66.7
Literate	633	32.9
Literate in English	318	32.1
Female	37	40.5
Born in Pune	241	33.2
Mean Age^c	30.8	32.7
Never Married	147	43.5**
Living Alone	38	36.8
Mean Household Size^c	5.2	5.3
Spouse Earning	39	38.5

(Explanation of a, b, c, and d.)

- a. This column presents the absolute number of individuals with a given characteristic. (There are 228 Brahmans in the sample.)
- b. The percentages in this column should be read as follows:
Among all of the individuals with this characteristic in the sample, 'x%' were leavers (26.3% of the Brahmans were leavers), and should be compared with the percentage of leavers in the entire sample (34.5%).
- c. Where means are presented, the first column (titled **Number**) gives the mean for the entire sample (806 cases) and the second column (titled **% Leavers**) gives the mean for the 278 leavers. (The mean age of the factory workers is 30.8, but for the leavers it is 32.7).
- d. Other regions and other religions

Social and Family Background (cont.)

	Number	% Leavers
Mean Number Earners per Household	1.7	1.8
Mean Dependents per Earner ^a	2.6	2.6
Mean Household Monthly per Capita Income ^c	33.74	33.1

Job History and Search

First Job	315	33.3
First Factory Job	472	33.7
Worked Outside of Pune	224	40.6*
Never Unemployed	567	34.0
Less Than One Month to Find 1957 Job	399	36.3
Job Search Strategies, 1957		
Answered an Advertisement	45	22.2
Written Application	268	29.9
Used the Employment Exchange	233	37.8
Union Helped	27	55.6*
Kin and Friends Helped	507	34.5

Job Status

Factory		
Textiles	241	34.0
Paper	152	53.3**
Engine	148	24.2**
Biscuit	128	18.8**
Rubber	137	40.1
Occupational Class		
Clerk	77	31.2
Supervisor	165	29.1
P and M Worker	564	36.5

TABLE 2.5 (cont.)

Job Status (cont.)

	Number	% Leavers
Skill Grade		
Skilled, Grade One	20	30.0
Skilled, Grade Two	20	15.0
Semi-skilled, Grade One	122	36.1
Semi-skilled, Grade Two	110	33.6
Unskilled	292	39.7*
Mean Wage^c	107.0	101.3
Temporary Worker	99	56.6**
Years Seniority^c	10.3	10.6

General Work Attitudes

Finding a Job Will Be		
Difficult	221	32.6
Easy	252	34.1
Don't Know	216	31.9
Won't Try	117	43.6*
Job Preference		
Job Security	465	32.7
High Pay	104	36.5
Chance to Advance	237	37.1
Aspire to Supervisory Job	326	30.4*
Prefer Non-Factory Job	552	32.6
Will Retire to Village	219	32.4
Importance of Influence		
Most Important	373	38.1
Important	282	34.0
Little Importance	151	26.5
Seek Non-Factory Job Next	266	33.5

General Work Attitudes (cont.)

	Number	% Leavers
Proportion Agreeing		
Company officers think only of themselves.	538	40.3
In the long run this company will put it over on you.	611	36.0
The company exploits workers every chance it gets.	555	36.4
The company shows favoritism in its promotions.	475	39.4**
The company is good, but should pay a fair wage.	720	34.3
The workers in this factory are generally unhappy.	606	36.8
If the company could, it would give all workers a wage increase.	490	37.3*
Sometimes the company is for workers, sometimes it is not.	421	32.5
When the company promises something, you usually get it.	266	30.1
A man can get ahead in this company if he tries.	333	28.8**
Workers put as much over on the company as the company puts over on them.	398	30.7*
If the company were more careful in picking supervisors, the workers would be happier.	614	34.7
The workers are friendly and good to work with.	710	33.9
Mean Scale Score^c	47.33	46.03
Family Job Satisfaction		
Bad	70	44.3
Fair	353	36.0
Good	383	39.3

Using, then, the individual variables to distinguish those who were and were not still working in the factory, who did leave and who remained behind? Among the castes and communities, the two ends of the continuum were involved to different degrees in turnover. The Brahmans tended to stay

while the Harijans left: that is, 26.3% of the Brahmans and 43.9% of the Harijans had left, compared with 34.5% for all castes and communities. Moreover, using the full range of castes, caste as a whole was significantly related to leaving ($\chi^2=18.48$, p less than .01). Education, except for a significantly greater likelihood for those with some technical training to leave (54.2%), had relatively little relation to leaving (overall $\chi^2=4.02$, p greater than .01). Similarly, literacy did not make a worker more or less likely to be among those leaving the factory. The only other social background characteristic that had any significant relation to leaving was marital status: the unmarried (43.5%) were significantly more likely to have left. Surprisingly, none of the variables having to do with family size or economic well-being made any difference: even sex seems not to have mattered. Nor were the migrant groups disproportionately represented among the leavers, although those who had previously been employed in a job outside the Pune metropolitan area were slightly more likely to leave.

The only significant variable having to do with the worker's earlier job history and experience in the job market was that those whom the union helped get the old job were disproportionately represented among the leavers. This might suggest some victimization of union influentials and there is some evidence of this in the discharge of workers in at least one company because of strike activity. However, the number of cases is quite small — only 26 workers in all recalled having been helped by a union to find the old job — and union membership, more particularly union help in job market activities, appears important nowhere else in the study, so that it is difficult to make much of this finding. It is a bit startling to find that what in India are called 'freshers,' those in their first jobs, had the same likelihood of leaving as anybody else, as did those who had and had not found their old jobs relatively quickly.

Similarly, general work attitudes seem to have had little impact. There is some evidence of voluntary withdrawal from the labor market in the fact that somewhat disproportionately represented among leavers were those who in 1957 said that they would not seek a new job if they were retrenched. Among the other general attitude items, supervisory aspiration seems to have held the worker in the factory. None of the other general job attitudes — how difficult a worker thought it would be to find a new job, the kind of job he preferred, how important a factor he believed influence to be in a work career, or whether he was village-oriented — made any difference.

Even more surprising is the limited predictive effectiveness of the characteristics of the jobs in the old factories. To be sure, the separation rates of several of the factories differed significantly from the general rate — the paper mill had a very high rate, while the engine and the biscuit factories had

very low ones. Also the workers whose employment was temporary by company definition were more likely to leave, although this formal non-permanent status was not an infallible guide to the marginality of a worker's appointment. As noted in the earlier study, a worker could be called temporary and still have as much as five year's seniority. But it is surprising to find that clerks or supervisors had the same separation rates as the rest of the workers, that by and large neither skill level, nor earnings, nor seniority, made any difference in mobility. One would surely expect something about the worker's status in a factory to make him more or less likely to leave, but clearly these gross measures of intrafactory status did not matter.

What does seem to have distinguished leavers from stayers is the worker's attitudes toward company management and fellow workers. The fact that these attitudinal differences emerged so clearly is impressive, when the gap between the measurement of the attitude in 1957 and the date of the worker's actual departure from the company may have been as much as seven years. The job satisfaction scale ranges from a low of 33 points for a worker who agreed with every negative statement about the company and disagreed with every positive one, to 65 for those who gave all the favorable responses; the lower the score, the less favorable the worker was about his job. Those who left were significantly less favorable than those who stayed in the factory, although there is obviously a great deal of overlap between the two groups. Six of the 13 individual items also discriminated between stayers and leavers, with the most potent predictors being a severe indictment of the selfishness of the company's officers, a charge of favoritism in promotion policy, and the feeling that individual efforts would not be rewarded by promotion.

In summary, then, those who left were distinguished from those who stayed by caste, marital status, place of earlier work, preference for non-factory work, supervisory aspiration, particular factory, permanence of appointment, and somewhat lower job satisfaction.

Voluntary Versus Involuntary Departure

It was indicated at the outset that simply sorting the leavers and stayers and comparing their characteristics is only one way to answer the question of who left. While it gives a technically correct answer, it is not a very satisfying or illuminating one because too many sociologically diverse phenomena are mixed together. In particular, if the point is to ascertain why workers left the old jobs, and not simply what subset of workers was hitting the job market in

a particular period, then mixing together those who left because the company discharged them with those who left voluntarily will confound any reasonable explanation of what really determined turnover. For example, the data in column 2 of Table 2.5 indicate that Harijans were more likely than any other caste group to leave the old jobs. What these figures do not tell is whether Untouchables had such a relatively high departure rate because they were the first to be fired when the company's need for workers contracted, or whether they were leaving in disproportionate numbers of their own volition to seek better opportunities. If the point is to explain the motivations of individual workers making a job change, then the analysis should rule out departures initiated by the company rather than by workers, and explore the characteristics of only those workers who left voluntarily.

Like the question of who left, the determination of who left voluntarily is not as easy as it sounds. For one thing, there was some genuine ambiguity as to the voluntariness of a worker's departure if he overstayed his leave. The company felt that he had abandoned his job knowing full well the consequences of remaining off the job for more than the specified period. The worker often felt that the circumstances that made him overstay his leave were beyond his control, and that he fully intended to return to work but was not permitted to do so by the company. In addition, in industries such as textiles, all aspects of industrial relations tended to be regulated by detailed governmental rules providing for special compensation if the worker was laid off at the company's initiative. If he quit of his own volition, these separation benefits did not accrue. This means that the company had a stake in over-reporting the amount of voluntariness in a separation, and the worker had a stake in blaming the company for his discharge.

Table 2.6 indicates the amount of disagreement between what appeared in the company files as the reason for separation, and the worker's response to a direct question as to whether the idea of leaving the factory was his own (*nokṛī soḍṇyācā nirṇay āpaṇ hoūn*) or the company's. In the first two rows are cases in which the company and the worker agreed on the voluntariness of the departure; rows 3 and 4 are cases in which they disagreed. The final two rows summarize the number of voluntary departures according to company records and the number according to the workers.

It can be seen that in the large majority of cases (185 out of 227 or 81.5%), the workers and the management agreed on whether they were fired or quit, and that the total number of layoffs or quits was fairly close no matter whose word was taken. There were 140 quits according to the company, and 132 according to the workers. Thus either way, about 40% of the workers left at the company's initiative rather than their own. The previous study, based upon the workers' earlier job histories, commented that the entire discussion

TABLE 2.6
Company/Worker Comparisons on Voluntariness

	Factory					Total
	Textiles	Paper	Engine	Biscuit	Rubber	
Company Says Voluntary and Worker Says Voluntary	35	17	23	8	33	116
Company Says Involuntary and Worker Says Involuntary	9	48	3	5	4	69
Company Says Voluntary and Worker Says Involuntary	17	1	5	1	1	25
Company Says Involuntary and Worker Says Voluntary	0	4	2	4	6	16
TOTAL Number Company Says Voluntary	51	18	28	9	34	140
TOTAL Number Worker Says Voluntary	35	21	25	12	39	132

about low commitment of labor in India missed the point that much of the turnover was initiated by the company and not by the worker. These current data bear out that earlier impression.

There were, however, 41 cases in which the company and the worker disagreed as to who was responsible for the departure. Seventeen of these cases were in the textile mill, and in each of those cases, the company said that the worker left voluntarily, while the worker said that he was fired. In the other factories, with the exception of the engine factory where workers were laid off as the result of a strike, it was the worker who said that he left voluntarily while the company said that he was fired. In these cases, the worker was usually not reporting some formal offense recorded in company files, such as stealing or sleeping on the job.

An examination of the primary reasons for departure taken from com-

pany and worker interviews can pinpoint the processes involved with this disagreement. Table 2.7 presents a tabulation of those reasons with the number of workers who indicated each reason as the primary cause of the separation.

TABLE 2.7
Primary Reasons for Separation

Reason	Number of Workers	Percentage of Workers
Retrenchment	46	20.3
Old Age	34	15.0
Sickness	20	8.8
Disliked Job	65	28.6
Lacked Mobility	13	5.7
Quarrel	19	8.4
Strike	11	4.8
Overstayed Leave	14	6.2
Misdemeanor	15	6.6
Family	7	3.1
Found Better Job	<u>42</u>	<u>18.5</u>
TOTAL	227	100.0

It can be seen that one out of five workers was put back on the labor market because the company was reducing its labor force generally, and not because of any personal characteristic. Most (34) of the 46 workers retrenched were in one factory, the paper mill. Here a severe shortage of water in the city, resulting from a flood after a disastrous breach of a wall at the municipal reservoir, forced the closing of one whole section of the plant. A detailed comparison of the personal characteristics of the workers who were retrenched with those who remained shows few significant differences between them, except for the slightly greater likelihood of members of the Backward Castes to lose their jobs — the way of the world. Whatever the selectivity of the discharge, however, the main point is that there is little profit in searching for individual characteristics or motivations for job changes when it was the company that made the decision on grounds that had little to do with the worker.

On the other hand, old age and sickness were characteristics leading to separation which had to do with the individual but were only secondarily related to job performance. About a quarter (23.7%) left because they were too old or too sick to work. About 17.6% or 40 workers in all were discharged for cause: participating in a strike, overstaying leave, or committing a specific misdemeanor such as stealing or sleeping on the job. And contrary to much of the folklore about the habits of industrial workers in developing societies, only seven or 3.1% of the workers left for family or personal reasons. Still, the bulk of the workers (61.2%) left of their own accord for job-connected reasons: they disliked the work, they had no chance for advancement, they quarreled with the supervisor, or they found a better job, and it is those workers leaving voluntarily for job-related reasons who are of primary interest.

Returning to the question of the voluntariness of the separation, it is now possible to scrutinize more closely the cases of disagreement between the worker and the company by combining the specific reasons for departure and what is known about the factories in which the disagreements took place. There were 25 cases in which the company said that the worker left voluntarily, but the worker indicated that he was discharged, and 16 cases in which company records showed a discharge, but the worker said that he left voluntarily. The former cases appear to reflect the company's bias in favor of voluntary withdrawal. Seven of the cases were reported as resulting from activities during a strike, but the company said that the worker left voluntarily, while the worker said that he was fired. Similarly, eight of the workers retired for reasons of age, but the company and the workers disagreed on the voluntariness of the retirement. Even more ambiguous were the five cases in which the worker overstayed his leave, and finally there were five cases of retrenchment which the company classified as voluntary withdrawal. In short, in all of the cases where the company said the departure was voluntary while the worker said it was involuntary, the worker and the company agreed on the reasons for the departure, but they disagreed as to whether the consequent withdrawal was voluntary. On the other hand, when the company said that a worker was dismissed, and the worker said he left voluntarily, there tended to be a disagreement on the real reasons for departure. For instance, two of the workers fired by the company because of age indicated that they left voluntarily because they did not like the job. Indeed, of the 16 who indicated that they left voluntarily but were reported by the company as discharged, 14 said that they left because they disliked the old job, and five said that they had already found a better one.

Since the point is to explain each worker's departure largely in terms of personal characteristics and work experience, the worker's judgment as to

the voluntariness of his departure will generally be used. The exception to this are the cases in which company records showed that the worker was discharged for an actual misdemeanor such as theft or sleeping on the job. Here the official version rather than the worker's has been adopted. This means taking the 132 workers who declared themselves to be voluntary, with the one adjustment mentioned, as voluntary departures, leaving 95 involuntary departures.

Aside from the intrinsic interest of the extent to which separations were company or worker initiated, the distinction would be relatively unimportant in this analysis if the two groups were very much alike. In that case, using the two groups together would not distort the analysis of what distinguished those who chose to leave from those who stayed, even though technically 'chose to leave' implies voluntary departure. In point of fact, however, the involuntary and the voluntary leavers differed substantially. Table 2.8 indicates the percentage of those in each category who left the factory voluntarily, some 132 workers, or 17.5% of the 755 in the original cohort known to be still alive in 1963 and who could be located for an interview. Of the 62 variables describing various characteristics of workers presented in Tables 2.5 and 2.8, the voluntary and involuntary leavers differed on 33 of them.

For instance, the caste profile of the voluntary leavers was different from that of the involuntary leavers. The voluntary leavers had a disproportionate number of Brahmans: the leavers as a whole had a disproportionate number of Backward Castes. 32.6% of the voluntary leavers had never been married, while only 15.8% of the involuntary leavers had remained single. The two groups were also very different in educational qualifications. Only about a third (32.8%) of the leavers who had no education left voluntarily, while 82.8% of the leavers with tenth standard or more education left voluntarily. The same held true for literacy. The literate worker tended to leave voluntarily (60.2%), and if the worker was literate in English, his departure was even more likely to be voluntary (75.3%). In job preference, a much higher proportion (89.2%) of those who preferred a job with advancement over one with guaranteed permanence left voluntarily. The voluntary leaver was more likely to be a man; in fact, it is remarkable that of the 14 women who left the factories, only one left at her own initiative. Compared with the involuntary leavers, the voluntary leavers were younger, had a higher per capita family income, were more likely to be clerks, were higher paid, had been working in the factory for a shorter period of time, and were less dissatisfied with their jobs.

Clearly, mixing the two populations together makes it very difficult to isolate determinants of individual job mobility. And since the purpose here is to identify those variables that made the worker decide to move, it is the

voluntary workers who really matter.

Confining the question of who left to those leaving voluntarily, a somewhat different picture emerges (Table 2.8). Caste, before an important discriminator in general between those who left and those who stayed in the factory, was now irrelevant, except perhaps for the non-Maharashtrian castes who do seem to have been slightly more mobile. Education now became very important, with those with no education staying in the factories if they could and those with technical or higher education leaving. Literacy, and especially literacy in English, was also an important distinguishing characteristic. Women left only at the company's discretion. The unmarried male was still more likely to leave than the married one. Voluntary leavers were more likely to have used the employment exchange to find the old jobs. They preferred a job with a chance for advancement over one with higher pay. Among factories, once the retrenched workers were removed from the sample, the paper mill's rate of voluntary departures was about average, while the biscuit factory's workers tended to stay. The unusual factory was now the rubber factory, where a very high rate of voluntary departures was probably due to a combination of unpleasant work, low wages, and an overly educated work force. Job status was still a surprisingly poor predictor of leaving, but job satisfaction, or rather dissatisfaction, remained an important distinguishing factor for workers who would leave. In fact, there was now an additional attitudinal dimension: if the worker's family were dissatisfied with his job, he was more likely to leave voluntarily.

TABLE 2.8

Predictions of Voluntary Departures, One Variable at a Time

Variable	Total Sample (N)	% Voluntary Leavers
N	755	17.5
Caste		
Brahman	221 ^a	20.4 ^b
Maratha	213	15.0
Intermediate	142	13.4
Harijan	78	15.4
Other ^d	101	23.8 [*]

TABLE 2.8 (cont.)

Variable	Total Sample (N)	% Voluntary Leavers
Education		
No Education	179	10.6*
Up to Fourth Standard	185	13.1
Up to Seventh Standard	151	15.9
Up to Tenth Standard	116	20.7
Matric or SSC	80	25.0**
Technical below BA, BSc	22	45.5**
Graduate	20	30.0
Post Graduate	2	50.0
Literate	601	19.3*
Literate in English	306	22.2**
Female	36	2.8*
Born in Pune	227	14.1
Mean Age ^c	30.8	29.8
Never Married	141	30.5**
Living Alone	35	14.3

* .05 level of significance

** .01 level of significance

(Explanation of a, b, c, and d.)

- This column presents the absolute number of individuals with a given characteristic. (There are 221 Brahmans in the sample.)
- The percentages in this column should be read as follows:
Among all of the individuals with this characteristic in the sample, 'x%' were leavers (20.4% of the Brahmans were leavers), and should be compared with the percentage of voluntary leavers in the entire sample (17.5%).
- Where means are presented, the first column (titled **Total Sample**) gives the mean for the entire sample (755 cases, omitting those who could not be found and those who died) and the second column (titled **% Voluntary Leavers**) gives the mean for the 132 voluntary leavers. (The mean age of the factory workers is 30.8, but for the voluntary leavers it is 29.8)
- Other regions and other religions

Variable	Total Sample (N)	% Voluntary Leavers
Mean Household Size ^c	5.2	5.3**
Spouse Earning	36	13.9
Mean Number Earners per Household ^c	1.7	1.8
Mean Dependents per Earner ^c	2.6	2.5
Mean Household per Capita Income (Rs) ^c	33.74	35.38
Work History		
First Job	298	17.1
First Factory Job	445	17.5
Worked Outside of Pune	201	19.9
Never Unemployed	531	16.6
Less Than One Month to Find 1957 Job	369	17.6
Job Search Strategies (1957)		
Answered an Advertisement	43	7.0
Written Application	258	19.4
Used Employment Exchange	222	25.2**
Union Helped	26	23.1
Kin Helped	410	16.8

TABLE 2.8 (cont.)

Variable	Total Sample (N)	% Voluntary Leavers
Old Job Status		
Factory		
Textiles	219	16.0
Paper	143	14.7
Engine	144	17.4
Biscuit	122	9.8**
Rubber	127	30.7**
Occupational Class		
Clerk	72	22.2
Supervisor	157	15.3
P and M Worker	526	17.5
Skill Grade		
Skilled, Grade One	20	15.0
Skilled, Grade Two	20	10.2
Semi-skilled, Grade One	111	18.9
Semi-skilled, Grade Two	102	17.6
Unskilled	273	17.6
Mean Wage (1957) ^c	107.3	107.2
Temporary Worker	93	31.0**
Tenure (Years)	14.8	12.8
General Work Attitudes		
Finding New Job Will Be		
Difficult	205	14.1
Easy	239	18.0
Don't Know	207	19.8
Won't Try	104	18.3
Job Preference		
Job Security	435	16.1
High Pay	97	13.4
Chance to Advance	223	22.0*

General Work Attitudes (cont.)

Variable	Total Sample (N)	% Voluntary Leavers
Aspire to Supervisory Job	314	16.2
Prefer Non-Factory Job	113	21.2
Will Retire to Village	198	15.2
Importance of Influence		
Most Important	349	18.1
Important	263	19.4
Little Importance	143	12.6
Seek Non-Factory Job Next	506	17.2

Job Satisfaction

Proportion Agreeing		
Company officers think only of themselves.	498	18.9**
In the long run the company will put it over on you.	571	16.8
The company exploits the worker every chance it gets.	520	15.8
The company shows favoritism in its promotion policy.	442	18.3
The company is good, but should pay a fair wage.	674	17.5
The workers in this factory are generally unhappy.	570	18.6
If the company could, it would give all workers a wage increase.	755	18.5
Sometimes this company is for the workers, sometimes it is not.	392	17.1

Job Satisfaction (cont.)

Variable	Total Sample (N)	% Voluntary Leavers
When the company promises you something, you usually get it.	247	12.6*
A man can get ahead in this company if he tries.	307	15.0
The workers put as much over on the company as the company puts over on them.	368	14.7**
If the company were more careful in its selection of supervisors, the workers would be happier.	577	17.9
The workers in this factory are friendly and pleasant to work with.	664	17.2
Mean Scale Score ^b	47.3	46.3**
Family Believes Job Is		
Good	354	13.3**
Fair	335	21.8**
Bad	66	18.2

Taken all together, these piecemeal differences between those who left the factory lead to two general conclusions about labor mobility in Pune. First of all, probably the most interesting finding is that many of the variables that one would expect to predict voluntary mobility did not, in particular, the job status variables and the worker's previous experience in the job market. However, focusing on those variables that did distinguish between stayers and leavers, two different patterns seem to emerge. Looking at separations as a whole, particularly the involuntary leavers who made up about 40% of all leavers, the factories were discharging workers whose characteristics they found least desirable. Those who left voluntarily were the workers with characteristics the companies would probably have found most desirable. But before such generalizations can be substantiated, it is necessary to

examine the data in a more rigorous way.

Regression Analysis

While the crude relation between voluntary leaving and each available social background, job, and attitudinal variable, as in Table 2.8, gives an indication of the broad descriptive outlines of the phenomenon, studying one variable at a time can be very misleading when explanation and prediction are important.

The main problem with such two-way tables and correlations, in its extreme form known as 'spurious correlation,' is that observed two-way relationships reflect not only the 'true' relation between the variables, but also the effects of every other factor related to both. A classic example is the link between the number of storks in an area and the birth rate, highly related not because storks bring babies, but because storks are common in rural areas, and rural areas have high birth rates. In these data, similarly, Brahmans may seem to have had an unusually high proportion of leavers only because they were better educated than other groups, and it was education that really mattered. Even if education did not completely account for the apparent effect of caste, the true relation could be much weaker than it seems in Table 2.8.

Obversely, correlated factors can mask a true effect, so that variables that seem to be poor predictors of leaving may in fact be very important. For example, if Brahmans tended to be in supervisory and clerical jobs, and if workers in these higher status jobs were less likely to leave than production and maintenance workers, it might appear that Brahmans were neither more nor less likely to leave than other castes, even if the relation were in fact strong. For exactly the same reasons the apparent effects – or lack of effects – of education and occupation were pretty much determined by their relation to caste. Supposing that there are, say, 10 more variables related to caste, education, and occupation, who can tell what any of the simple relations really signifies, or how much any of them really contributes to the explanation of the departure?

A deeper insight into the factors affecting voluntary leaving than is possible with tabular or correlational methods can be achieved by using various forms of regression analysis. With these methods, a large number of factors can be controlled at once, so that the estimated effects of each variable are purged of their spurious components. In the resulting prediction equation,

redundant and irrelevant factors may be identified. The estimated coefficients of the significant variables measure their net effects on voluntary leaving over and above the effects of all other factors also under consideration. Thus it is possible, for example, to assess the extent to which apparent caste effects were the result of not controlling for education, occupation, wage, and attitudes; whether differences associated with marital status were really a function of age or previous job experience; or whether the apparent lack of effect of occupational aspirations and job preferences was merely a product of not taking account of other key factors.

Given the ability of regression analysis to control for many factors simultaneously, it is always tempting to fit an equation containing all available variables in hopes of removing at a stroke all doubts about what the 'true effects of each might be. But in exploratory studies such as this, where many plausible factors are measured, and the relative importance of effects is the main concern, throwing in the kitchen sink and controlling for everything can be nearly as illusory as exercising little control at all. For with moderate numbers of observations, large numbers of irrelevant and redundant variables tend to emphasize idiosyncratic aspects of the data, leading to estimated coefficients which are both difficult to interpret and highly sensitive to sampling fluctuations. Consequently, the analysis of the determinants of voluntary leaving — and indeed all the analyses reported throughout this book — proceeded in two stages: first, a series of preliminary analyses were run aimed at reducing the large number of potentially interesting factors to a smaller set of variables amenable to more meaningful treatment, and second, a 'final' equation was estimated and its coefficients and fit examined in detail.

Table 2.9 reports this 'final equation' for voluntary leaving versus staying. The independent variables included in the model are the result of the data-reduction phase of the analysis. How they were selected and specified is of some substantive interest in its own right. As a first step, literally scores of regressions were examined in order to eliminate from further consideration variables which could not be shown to have any relation at all to voluntary leaving. These included virtually all of the variables which also are not significant in the simple cross-tabulation of Table 2.8, thus substantiating the conclusions drawn above. Particularly noteworthy is the absence of any of the variables having to do with occupational history, aspirations, and generalized attitudes toward work, and the small number of relevant social background and occupational variables. However, some variables, such as caste, wage, and occupation, of such high intrinsic interest, that no analysis would be complete without them were retained. As a matter of fact, this short list

served equally well for subsequent analyses of re-employment and new job outcomes, and, henceforth, most of the presentation is confined to it.

TABLE 2.9
Regressions on Voluntary Leaving

	LOGIT		OLS	
	Coefficient	t-statistic	Coefficient	t-statistic
Brahman	-0.26	0.9	-0.05	1.3
Harijan	0.30	0.8	0.01	0.6
Education	0.69	2.9**	0.10	3.1**
Non-Maharashtrian	0.51	2.1*	0.07	2.1*
Single	1.01	3.3*	0.16	3.4*
First Job	0.02	0.01	0.04	1.2
Seek Factory Job	-0.46	1.6	-0.07	1.7
Textiles	0.22	0.6	0.21	0.4
Paper	0.84	2.1*	0.11	1.9
Biscuit	-0.41	0.9	-0.03	0.6
Rubber	1.10	3.2**	0.17	3.3**
Wage	0.001	0.5	0.0002	0.5
Supervisors	-0.15	0.2	-0.03	0.5
Clerks	-0.09	0.01	0.02	0.4
Permanent	-1.36	4.1**	-0.22	4.2**
Job Satisfaction				
Component I	-0.31	2.5*	-0.04	2.6*
Component II	0.09	0.8	-0.01	0.7
Component III	0.02	0.2	-0.004	0.3
Family Job Satisfaction	-0.46	2.6**	-0.07	2.7**

A second method of data reduction entailed combining the 13 individual job and company satisfaction items into three indices, referred to in Table 2.9 as Component I, Component II, and Component III. Even though one attitude statement or another turned out to be significant in most subsequent analyses, no *prima facie* case could be made as to why one item should be predictive and the others not. Moreover, the few significant items varied from analysis to analysis, and no *ad hoc* justification could be sustained.

Because the aim is to capture whatever explanatory information these variables have, rather than to explore their latent inter-relationships, the indices are the unrotated principal components of the items. Roughly speaking, the three indices together are the best approximation to the original items in the least squares sense and contain most of the systematic information in them. Table 2.10 gives the loadings of items and components which are both the correlations between items and components, and the weights by which items are combined to produce the Component variables used in the regressions. Although there is no attempt to interpret the Components individually in substantive terms, it will be seen that the first Component is largely an average of the 10 items having the larger weights, and that the other two indices contrast positively weighted with negatively weighted items. The varimax rotated components were also calculated and another method of factor analysis, 'Kaiser's Second Generation Little Jiffy,' was used as a check on validation, but the simple principal components were retained.

TABLE 2.10
Principal Component Analysis of
1957 Job Satisfaction Items (Loadings)

Statement	Component I	Component II	Component III
Company officers think only of themselves.	.684	-.270	.219
Company exploits workers every chance it gets.	.711	-.246	.095
In long run, company will put it over on you.	.701	-.283	.029
The workers in this factory are generally unhappy.	.649	-.183	.188
Company shows favoritism in promotion.	.630	-.219	.061

Statement	Component I	Component II	Component III
If company could, it would give all workers a wage increase.	-.529	.264	-.114
When company promises something, you usually get it.	.530	.444	-.309
A man can get ahead in this company if he tries.	.521	.407	-.337
Sometimes company is for workers, sometimes it is not.	.500	.469	-.209
Workers put as much over on company as company puts over on them.	.513	.468	-.134
The company is good, but should pay a fair wage.	-.006	.446	.542
The workers are friendly and good to work with.	.133	.403	.549
If company more careful picking supervisors, workers happy.	.045	-.412	-.342

In Table 2.10, the statements concerning job satisfaction are arranged in order of the magnitude of their loadings on the factor on which they load most heavily. The clustering of statements around one and only one factor is very clear: the first six are associated with the first factor, the next four with the second factor, and the final three with the last factor. The first set of items are fairly clear-cut statements, mostly negative — the one positively worded statement has a negative sign — about the company officers and the factory. This tended to be the most general attitudinal factor, and workers giving

hostile responses on one item tended to express negative opinions on all. The next set of statements clustered in factor 2 are a little more ambivalent but on the whole positive, and attention shifts from the company to the workers. The third set involves statements that are less equivocal and more positive about the company — the negatively worded item has a negative sign. In the remainder of this section, therefore, the job satisfaction items will be presented as factors when discussing their predictive effect.

A final aspect of the specification of independent variables has to do with their coding. Quantitative variables, and ordinal variables such as family job satisfaction and education, which could be shown to operate in an essentially quantitative manner, were not changed. Qualitative variables were coded into dummy variables to retain only those distinctions between categories which could be shown to have some predictive power. Thus for caste, the dummy variables 'Brahman' and 'Harijan' contrast these two groups with all other caste groups — Marathas, other religions, and so on — which behave in a similar way *vis-à-vis* voluntary leaving and re-employment. In like manner, the only thing about the number of previous jobs that turned out to be predictive was whether it was one job or more than one.

In summary, the independent variables in the table are significant for what they represent and for what they do not represent, a point which the conclusion of this study will return to.

Turning to Table 2.9, the coefficients and their statistical significance are estimated by logit regression, the simplest appropriate method for analyzing dichotomous outcomes. The coefficients measure the effect of each independent variable on the logarithm of the odds of being a voluntary leaver versus a stayer. The estimated equation also implies predictions of the probability of being a voluntary leaver. In order to facilitate interpretation of the results, included in the table is how much a unit change in each independent variable affected the probability of leaving voluntarily for individuals who, all other variables being equal, had an average (25%) chance of leaving. Also included are the coefficients and statistical significance of the ordinary least squares regression of the 0,1 dummy variable 'stay, leave' on the predictors. These will be seen to be completely consistent with the more valid logit technique. For all coefficients, a positive sign means that, as the independent variable increases, the likelihood of leaving also increases, and a negative sign means that, as the independent variable increases, the likelihood of leaving decreases.

Looking down the first two columns, the important correlates of voluntary leaving, in the sense that their coefficients are large when all other variables are held constant, can be determined. Thus temporary workers

were 22% more likely to quit than permanent ones; rubber and paper factory employees, 16% and 11% more likely than employees in other factories; single workers, 16% more likely than married Pune residents; the more highly educated workers, 10% more likely than uneducated ones; non-Maharashtrians, 7% more likely than Maharashtrians; those whose families disliked their job, 6% more likely than those whose families were satisfied; and those who held the strongest negative feelings toward the job, 4% more likely to quit than those with more positive attitudes. None of the other variables survives as an effective predictor of quitting once the effect of confounding variables is taken out.

The apparent effect of caste noted earlier now disappears as more important variables are controlled, and even the gross distinction between Brahmans and Harijans is not statistically significant. Perhaps most surprising is the low predictive effect of the two intrafactory variables indicating the rank of the worker — occupational class and wage level. It may also be noted that in the preliminary analysis which included many variables omitted from this table, neither seniority nor the skill level of the worker was an effective predictor. For a permanent worker, these gross features of intrafactory status seem to have had little independent effect on the likelihood of his quitting. This is startling, to say the least. It is also interesting to note that none of the variables relating to the previous working career, nor the worker's experience in the job market when seeking the 1957 job, nor his general attitudes toward factory work seem to be important in and of themselves as correlates of subsequent careers.

Chapter III

Getting Another Job in the Old Market

Turning now from the selectivity question of who left the factory back to the state of the market into which the workers had thrust themselves, or been thrust by their employers, what happened to the workers after they left the old factories? The nature of the re-employment was not, of course, unconnected with the workers' decisions to leave the old jobs. Perhaps it was the opportunities for the next job rather than the characteristics of the old one that are crucial to understanding job turnover. Indeed, since this set of interlinking studies was undertaken precisely because the sudden arrival in the Pune metropolitan area of some 80 or more new large-scale factories brought a sudden expansion of job opportunities, it is possible that the general characteristics of the market rather than the character of the old factories and the workers in them influenced turnover. Accordingly, the discussion now shifts to what happened to workers after they left the old jobs – the process of departure; how they went about looking for the next job; whether they got another job or not, and if not, how long it took to find it; whether it was in or out of the factory sector; how similar the new job was to the old one; whether they gained or lost in wages, and about how much; and whether they liked the new or the old job better. The two basic styles of analysis indicated in the introduction will be used throughout this section: a description of the labor market in general based upon what most workers did; and an exploration of selectivity, what kinds of workers did what.

Leaving the Factory

For a fair proportion of the workers, leaving the factory was attended by a quarrel of one kind or another with the management. When asked whether the circumstances of their departure gave them any reasons to complain (*takrāri*), 32% of the workers said that it had. Almost all the complaints reported to us had been formally registered with the company, but the union seems to have played very little part in the terminal complaint process – only 15% of the complaints had even been brought to the union's attention, and in only two cases did the worker indicate that the union had actually helped.

But then complaining seemed like a fruitless process anyway; only 8% of all complainants indicated that anything at all was done about the matter.

What were the quarrels about? About a fourth of those who complained — 7% of all leavers — reported quarrels with their supervisors. The rest of the disputes were disagreements with the company about the amount of money due to workers at departure. This is not surprising, since the calculation of the actual take-home pay of the individual worker, even in regular pay periods, was complex, involving several differently calculated rates, some of which fluctuated according to events having little to do with the worker's actual job performance. The first component of pay was the basic wage assigned to a particular job and skill rank. This was supplemented by a 'dearness allowance' — a cost of living add-on — and annual increments based upon seniority. In addition, some of the factories used piece rate payments and individual and group incentives for production and attendance. From these earnings, the company deducted absentee and late time, repayment for pay advances, charges accumulated at the company canteen, and the worker's contribution to the retirement fund. From pay period to pay period, debates between the workers and the management over these items were not infrequent.

Accordingly, it is not surprising that disagreement attended the calculation of the final pay, and at severance, the disputes would be even more acrimonious. Quarrels about the final pay check centered on the number of days for which pay was due, how much accumulated leave was taken and how much was still owed, and, above all, whether or not the worker was entitled to a share in the periodic — usually annual — bonuses and gratuities that were regular parts of the overall union-negotiated wage contract. Disagreements over these items were relatively frequent among departees, but by far the most common source of financial dispute concerned the largest component of the final financial settlement, the contributory Provident Fund. Over the years the workers could accumulate substantial amounts. Indeed, more than one labor officer suggested that some of the turnover was related to the workers' needs for a substantial sum of cash for a private need or occasion, like a wedding, an illness, or a disastrous agricultural season back in the village. While the worker often had to wait several months to receive his Provident Fund deposit, he could use it as a security against which to borrow.

These are substantial sums for workers to have all at one time. Did they find these moneys enough to support them until they found another job? Only 31.8% of the workers said that the final financial settlement was enough, and this group largely comprised those who were re-employed almost immediately or had lined up another job before leaving the old one. For most workers, the final pay did not stretch far enough. Accordingly, workers were asked what other sources of support enabled them to survive

TABLE 3.1
Final Pay at Departure

Rupees	Number Workers	Percentage Workers
None	37	16.3
1-499	39	17.2
500-999	53	23.2
1000-1499	37	16.3
1500-1999	26	11.5
2000-2499	10	4.4
2500-2999	9	4.0
3000 or More	<u>16</u>	<u>7.0</u>
TOTAL	227	100.0

TABLE 3.2
Additional Sources of Support

Source	Number Reporting	During Job Search % Reporting
Relatives	44	30.6
Savings	29	20.1
Casual Work	42	29.2
Borrowed	15	10.4
Wife Employed	13	9.0
Children Employed	15	10.4
Subsidiary Occupation	4	2.8
Self-Employed	6	4.2
Other	<u>15</u>	10.4
Total Workers Reporting	144	

while job hunting. Table 3.2 presents their responses as to the most important sources of additional financial support during the interlude between jobs. Only the 144 workers who indicated that they received such supplemental support are included in this tabulation. Since workers could report more than one source, the percentage column adds up to more than 100%.

It is clear that when the final pay was exhausted, half of the workers fell

back on their families — relatives, working wives, or children — as a source of support. About one in five had savings of his own to utilize. It is a little surprising that only about 10% were forced to, or perhaps could, borrow for this purpose.

Having commented briefly on some of the difficulties surrounding the workers' departure from the old company and how they supported themselves after that departure, the next section turns to an examination of the workers' occupational careers after leaving the old jobs.

The Unemployed

Of the 227 workers who had left the old jobs and could be located and interviewed, 42 or 18.5% held no other job between the time of the separation and the time of the survey. Everyone else had held at least one job since the separation. Even this relatively moderate unemployment rate can be reduced even further by deleting those who essentially dropped out of the job market and made no effort to find another job. Indeed, only five of the 42 continuously unemployed reported making any effort to find another job. Hence only 2.6% of those who actually sought a job had not found one by the time of the survey, and several of those were quite recent departures.

A closer look at those who did not get another job illuminates even further the nature of unemployment in the old job market. In the main, those who remained unemployed were really retirees: 26 of the 42, or 62%, gave old age or sickness as the reason for the separation from the old factory. In a logit analysis using all the variables available from the 1957 survey to predict whether or not a worker would remain unemployed, only age emerged as a significant predictor. The few permanently unemployed who were not old or sick tended to be the workers who had no formal education at all.

In short, the overwhelming majority of the workers were able to find some sort of further employment when they looked for it. Those who did not were in the main the old and the sick voluntarily withdrawing from the work force, and the rest had no educational capital to bring to the marketplace. With whatever qualifications one cares to make, this means that these data do not confirm the high rates of urban unemployment generally attributed to Indian society. The data are consistent, however, with the image of the rapidly expanding demand for labor in the local market that these studies were exploring. Was it this unusually favorable labor market that led to the high rates of re-employment? The answer lies in comparing how long the re-

employed workers took to find new jobs with the length of time the same set of workers had taken to find the original jobs in the old market.

Time Until Next Job

Many workers had little or no wait between jobs. Almost half (86 or 46.5%) of the workers who were re-employed found a new job as soon as they left the old one. An additional 26 workers or 14% of those re-employed took less than a month to find the next job, that is, 60.5% were re-employed within a month. It should be emphasized here that, by and large, the search for re-employment came after the worker left the old job. Only a few workers — 22 in all — said that they knew of, or had acquired, a new job before leaving the old one. At the other end of the distribution 26 workers, or 18.4%, of the re-employed took more than six months to find a new job, and 14, or 7.6%, took more than a year.

This record of re-employment underscores a phenomenon noted with some surprise in the 1957 study, namely that the workers were generally quite sanguine about their chances for re-employment should they find themselves out of a job, and that, on the basis of earlier experience, they believed that finding a new job would not be a difficult task. More specifically, before 1957, most workers reported little difficulty in finding their first job. Thirty percent of the workers in all factories reported getting their first jobs as soon as they wanted them. The median time spent in search for the initial job was only two months. Nor have the workers been plagued by unemployment. Two-thirds (66.8%) of all workers reported no unemployment period whatsoever since they first secured a job. The minority who had been unemployed had a median time spent without work of only 10.7 months. Of those who were unemployed, only 2.4% reported more than one period of unemployment.

In view of this relatively secure job experience, little anxiety shows up when the workers contemplate the loss of their present jobs. It should be pointed out that the questions asked in this regard were necessarily hypothetical, and sentiments would no doubt be less calm if the threat were more realistic. Nonetheless, the sanguine attitude toward even this hypothetical event is striking. Only 2.4% of all workers foresaw an indefinite period of unemployment if they were laid off. About one-third (36.1%) could not estimate how long they would be unemployed, but did not think it would be too long. Of those who gave a time estimate, 8.9% indicated they could get

another job immediately, the others expected that the median time spent in the search was to be only three to four months. Only 10.8% thought it would take more than a year to find a new job. Not only did the workers expect only a brief period of unemployment, but only 28.3% felt that it would be difficult or impossible to get a new job, and as many as 29.8% were reasonably sure that the search would be easy.¹

TABLE 3.3
Time Taken to Find Job

	Getting 1957 Job (%)	Getting New Job (%)
None	32.6	46.5
Up to a Month	18.1	14.0
Up to Six Months	30.4	21.1
Up to One Year	8.4	10.8
More Than a Year	<u>10.5</u>	<u>7.6</u>
TOTAL	100.0	100.0

In both the search for the 1957 job and the search for the new job, the majority of the workers took less than a month to find re-employment. The post-1957 market seems to have been slightly better than the earlier years, although the two search time distributions are fairly similar. One thing that might have accounted for the slight diminution of search time was an increase in the worker's efficiency in the job search. Did the ways in which the workers went about looking for a new job change?

Looking for a Job

What did the workers do to find a new job? A substantial proportion (42.7%) indicated that they did little if any searching: they went back to the family farm, retired, had a job already available before leaving the old one.

¹ Richard D. Lambert, *op. cit.*, pp. 62-68.

started their own businesses, or decided that their chances for re-employment were slim and made no effort to find a new job. The remainder used various means including seeking information or help from friends or relatives, answering newspaper advertisements, sending in written applications, registering with the employment exchange, or seeking help from the unions. Table 3.4 indicates the pattern of job-seeking strategies. The first two columns present the proportion of workers using each search strategy for the 1957 and the new job, and the last two columns, the proportion who reported that the strategy actually helped them to get a job. Once again the comparison is confined to those who left and were reemployed.

TABLE 3.4
Job Search Strategies for 1957 and New Jobs

Strategy	Percent Using Strategy		Percent for Whom Strategy Helped	
	1957	New Job	1957	New Job
Friends/Relatives	58.1	31.3	57.1	25.1
Written Applications	30.8	36.6	22.1	18.5
Answered Ads	3.5	19.4	2.2	2.2
Employment Exchange	25.2	24.2	2.2	7.9
Union	6.2	0.4	2.9	0.4

The general picture that emerges from this table comparing old and new job search strategies is one of both stability and change. The use, and the actual usefulness, of the traditional sources of assistance — friends and relatives — seem to have declined somewhat between the two job searches, but friends and relatives were still the most frequent channels. The use of written forms — advertisements and applications — increased, but their effectiveness did not seem to have improved. The use of the governmental employment exchange remained fairly stable. Its effectiveness improved somewhat, but, as was the case with the labor unions, it still played a small role in the job search. Looking at the table overall, particularly the last two columns, there does not seem to have been a large enough shift in job search strategies to explain the decrease in the time it took the workers to find a new job.

Who Was Hired First

Aside from how long the workers in general took to find a new job and how they went about the search, it is of interest to determine the selectivity of the job market in this respect. That is, which of the workers had the greatest or the least difficulty in finding a new job? In particular, was it a worker's personal characteristics, such as caste or education, or the job held in the old factory, or attitude toward that job, or job search strategy which determined how long a worker would be out of work?

Table 3.5 presents an answer to these questions, using the truncated list of predictor variables developed previously. It will be recalled that some 40 of the original variables were dropped because they did not significantly predict differences in leaving. Those same variables were also non-significant in the present context. While most of the predictor variables remaining in the table refer to the worker in the 1957 study, age and basic wage have been updated to refer to the time of the departure from the old job. Moreover, three new factors have been added to the list of predictor variables: the year of the departure from the 1957 job, the voluntariness of the departure, and job search strategies — all matters that might have had an effect on the period of unemployment.

It might be helpful to remind the reader one last time of the two forms in which the data are presented in the selectivity parts of the discussion. The percentages in column 1 of Table 3.5 represent the proportion of workers with each characteristic who took more than a month to find a new job. These should be compared with the rates of contrasting categories and with the overall proportion (39.5%) of workers who took that long or longer to find re-employment to get an indication of whether the Brahmans in this particular sample took longer than members of other castes to find a job. In the second and third columns, coefficients of the logit and OLS regressions are presented. These tell us whether and how much difference being a Brahman, for example, made with all other worker attributes held constant. The sign before the coefficient indicates whether the relation between the predictor variable and the length of time spent in the job search was direct or inverse. The asterisks indicate those variables whose association with job-seeking time is statistically significant at the traditional levels of probability.

TABLE 3.5
Predictors of Long Job Search

Variable	% Taking One Month or More	Coefficients	
		LOGIT	OLS
All Workers	39.5		
Brahman	27.1	-0.81	-0.15
Harijan	51.9	0.15	0.04
Education		-0.35	-0.07
None	45.7		
Up to 10th Standard	40.2		
Matric Plus	31.6		
Non-Maharashtrian		-0.05	-0.001
Pune Born	49.0		
Other Maharashtrian	34.1		
Non-Maharashtrian	38.5		
Single	36.8	-0.35	-0.05
Age Difference	-1.55	-0.24	-0.04
First Job	38.4	-0.21	-0.04
Will Seek Factory Job	37.9	-0.47	-0.09
Factory			
Textiles	34.1	-0.71	-0.12
Paper	56.1*	0.44	0.93
Engine	43.3		
Biscuit	46.2	0.53	0.11
Rubber	18.2**	-1.49*	-0.24*
Wage		-0.002	-0.001
Occupation			
P & M Workers	42.4		
Supervisors	32.1	-1.22	-0.21
Clerks	27.8	-0.60	-0.79

TABLE 3.5 (cont.)

Variable	% Taking One Month or More	Coefficients	
		LOGIT	OLS
Permanent	37.0	-0.11	-0.02
Job Satisfaction			
Factor 1		0.002	0.003
Factor 2		0.16	0.03
Factor 3		0.32	0.06
Family Job Satisfaction			
Old Job Bad	40.0		
Old Job Fair	30.4		
Old Job Good	50.7		
Left Voluntarily	30.7**	-0.56	-0.11
Year Left	-4.48 mos.	-0.15	-0.02
Written Application	39.2	-0.18	-0.05
Used Employment Exchange	50.7*	1.08*	0.19*
Used Kin/Friends	54.4**	1.27	0.23**
R²			0.26

Perhaps the most striking result of this analysis is the number of variables which might have been expected to be good predictors but were not. Personal characteristics, for example, seem to have made little difference, as judged from the two-way analysis and the better specified regression analysis where the confounding effects of other variables are removed. Nor does the nature of the job the workers held seem to have made much difference, including whether the job left was that of a supervisor, clerk, or ordinary worker. Further, in a separate analysis, it was ascertained that, among just the production and maintenance workers, the skill level of the job they were leaving made little difference in how rapidly they were re-employed, nor did it seem to have mattered whether they quit or were discharged from the old jobs.

In fact, of all the variables relating to the worker's former job, the only one that might have made a difference in how rapidly he found another job was having worked in the rubber factory or the paper mill. Even the difference in search time for the paper mill workers disappeared when other variables,

particular age and education, were held constant. Workers leaving the rubber factory, however, still took significantly less time to find a new job. It will be recalled that this is the factory in which the company was in the habit of hiring highly educated workers for low-skill, low-paying, repetitive, unpleasant jobs, and it had the highest proportion of voluntary leavers. Nonetheless, even with education, wage level, voluntariness of departure, and all other variables held constant, workers from this factory still found new jobs more quickly than workers leaving other plants, and this was true in spite of the fact that there were no other rubber goods factories in the area.

The attitudinal variables are interesting. While none of the principal components showed up as a statistically significant predictor, the attitudes emerged more clearly when the worker indicated how his family, rather than he himself, evaluated the job: in the simple cross tabulations, those workers whose families thought that the old jobs were good ones found new jobs more quickly, and this difference survived in both the logit and the OLS analysis.

The only really strong predictor of how long it took a worker to find a new job was how he went about looking for it; the use of third-party intermediaries seems to have lengthened, not shortened, the search time. In both the two-way table and the logit and OLS regressions, those who used the help of either the employment exchange or friends and relatives took longer to find new jobs; so, it is not clear whether this means that the intermediaries introduced delay in the process – certainly a reasonable hypothesis for the use of the government employment exchange – or that those who did not quickly and easily find a new job on their own then sought the help of others.

Of special interest for the general thesis concerning the new factories' effect on the job market is the negative finding presented in Table 3.5 about the effect of the year of leaving the old job on the speed of finding a new job. As indicated by the establishment dates given in Table 1.3, most of the new industrial units came to Pune toward the end of the period between the two studies, especially from 1960 onward. Hence, if their arrival had a strong effect on the expansion of job opportunities, a shorter search would be expected for workers who changed jobs in the later years of the period. Both the crosstabs and the regressions do show that the job seekers in later years took a little less time to find a new job, but the difference was very small and not statistically significant. It certainly does not indicate the major effect of the rapid expansion of job opportunities we are seeking.

The relatively low level of determinancy in the factors predicting the duration of a worker's job search suggests what will be a repetitive theme in the analysis of the outcomes of job changes: in this traditional job market, in

addition to the difficulty, noted earlier, of predicting which workers would leave the factory jobs, what happened to them afterward was only weakly determined, if at all, by the nature of previous employment. How workers went about seeking new jobs seems to have been more important to the nature of the subsequent employment. Moreover, the market seems relatively insulated from the effects of the rapid expansion in job openings resulting from the arrival of many new, relatively high-technology factories. To test and define these general hypotheses further will require an analysis of the new jobs workers did get, to which the next section turns.

Residence and Job Changes

There has been a long-standing interest among analysts in the spatial aspects of turnover and job seeking. Was the market for new jobs localized or dispersed? More broadly, what was the link between residential and job changes? How many and what kinds of workers changed residences when they changed jobs? How far did they move? Of special interest are the workers who moved to other parts of India in the course of changing jobs.

TABLE 3.6
Region of Residence at Resurvey Time

	Number	Percentage
Pune Metropolitan Area	138	74.6
Pune District	6	3.2
Bombay City	12	6.5
Other Maharashtra	20	10.9
Northern India	6	3.2
Eastern India	3	1.6
TOTAL	185	100.0

As Table 3.6 indicates, of those who found another job, 74.6% were living in the Pune metropolitan area at the time of the resurvey, and another 3.2% lived in the Pune district outside the limits of the metropolitan area. Of the remaining 41 workers, 32 moved their residences to other places in

Maharashtra, including 12 to Bombay city; only nine or 4.8% moved out of Maharashtra.

Movement from the cities into the rural areas played a rather small part in the job change; 7.6% of those leaving factories, or 21.2% of those moving out of Pune, were living in rural areas in 1963. Moreover, if we exclude the workers in the paper mill, the retention power of the city was even more dramatic. Almost all those found to be living in rural areas had worked in the paper mill, which was located at the urban fringe, and many of its workers lived in a village setting even when employed in the mill. Table 3.7 gives the size distribution of the 1963 places of residence of those re-employed.

TABLE 3.7
Size at Time of Resurvey of Places of Residence

	Number	Percentage
Pune Metropolitan Area	138	74.6
Over 1,000,000	14	7.5
100,000 to 999,999	4	2.2
50,000 to 99,999	—	—
20,000 to 49,999	4	2.2
Urban under 20,000	12	6.5
Rural	<u>13</u>	<u>7.0</u>
TOTAL	185	100.0

How much residential movement was there among those who stayed within Pune? Not a great deal. Of the 138 workers residing in the Pune metropolitan area at the time of the resurvey, 125 or 90.6% remained at the same residence. The relation between residential and job mobility, of course, concerns not only change of worker's residence, but also change of job location. As part of a battery of comparisons between old and new jobs, the worker was asked whether the new job or the old one was nearer to his residence. Table 2.8 indicates the response to this question. Since there were seven workers who had held jobs at some time after leaving the old job but were unemployed at the time of the resurvey, the total number of workers responding to this question is 178, not the usual total of 185 who had ever been re-employed.

TABLE 3.8
Residential Proximity and Job Change

	Number	Percentage
Old Job Closer to Work	53	29.8
Both Same Distance	26	14.6
Current Job Closer	96	53.9
Don't Know	<u>3</u>	<u>1.7</u>
TOTAL	178	100.0

The overall picture is one of a residentially stable work force in a localized market. About half the workers decreased travel distance in the job move and about half either remained the same distance or were farther from their work; so, there is no clear relation between job change and proximity. Nevertheless, some workers did find jobs outside the Pune labor market. What characteristics distinguished the workers who moved from those who did not?

In Table 3.9, the set of standard predictor variables answers this question, using the location of the place of re-employment rather than the place of domicile. The spatial distribution of employers is slightly different from that of workers' residences in that 12 of the workers who still resided in Pune in 1963 now worked for employers located outside the metropolitan area and commuted to work. Hence 31.9% of the workers re-employed were working outside the Pune metropolitan area at the time of the resurvey. It is the distinguishing characteristics of this group that this section is exploring.

Of all the variables, only a few seem to have had any relevance. The more educated the worker, the more likely he was to be more mobile in his job search; people born in Pune especially tended to stay there; and clerks and workers in the rubber factory were somewhat less mobile than other workers, even with all other variables controlled. Note again the non-significant variables. One might reasonably expect the younger or the single workers to have been more mobile, or the more highly paid to have moved farther to find equivalent jobs, while the unskilled workers would have found other unskilled work locally. One might also expect that if the arrival of the new factories expanded local demand, then those entering the job market later in the period would have been more likely to remain in Pune. None of these relationships, however, seems to have obtained. Indeed, the data only confirm the common observation that Pune residents find ways to stay in the city

under almost any circumstances, and that those born in Pune are especially immobile.

TABLE 3.9
Predictors of Finding a New Job Outside the Pune Area

Variable	% Beyond Pune	Coefficients	
		LOGIT	OLS
All Leavers	31.9		
Brahman	39.6	0.54	0.11
Harijan	29.6	0.32	0.04
Education		0.83*	0.15*
No Education	25.7		
Up to 10th Standard	30.4		
Matric Plus	42.1		
Birthplace			
Pune	13.7**		
Other Maharashtra	39.3		
Non-Maharashtra	38.5	0.31	0.06
Single	29.8	-0.09	-0.001
Age Difference (Yrs.)	-1.69	-0.004	-0.001
First Job	29.5	-0.07	-0.01
Seek Factory Job	29.2	-0.77	-0.15
Factories			
Textiles	26.8	0.91	0.17
Paper	36.8	1.34	0.26
Engine	20.0		
Biscuit	23.1	-0.19	-0.003
Rubber	40.9	1.44*	0.26*
Wage Difference (Rs.)	3.71	-0.002	-0.0003

TABLE 3.9 (cont.)

Variable	% Beyond Pune	Coefficients	
		LOGIT	OLS
Occupation			
P & M Worker	30.7		
Supervisor	44.8	0.50	-0.09
Clerk	21.1	-1.68*	-0.28*
Permanent	33.3	0.01	0.01
Job Satisfaction			
Pr. Component 1		0.04	0.01
Pr. Component 2		-0.32	-0.05
Pr. Component 3		-0.07	0.003
Family Job Satisfaction			
Good	32.9		
Fair	29.3		
Bad	40.0		
Voluntary Leavers	34.2	0.17	0.03
Year Left Difference (Mos.)	-0.63	0.01	-0.003
Written Application	26.6	-0.45	-0.07
Used Employment Exchange	25.4	-0.62	-0.09
Friends/Relatives Helped	36.8	0.33	-0.05
R²			0.16

The Old Job and the New Job

One of the most obvious questions about the old job market is the extent to which workers tended to stay within the same occupational category as they moved from job to job. This is obviously a crucial question for labor market analysis. If skills once learned have no carryover into successive employment, then the time spent learning those skills is a waste both to the

economy and to the worker when he changes jobs. The relation between the old job and the new one will be explored in a variety of ways. Starting at the broadest level of analysis, we ask whether workers remained in the factory sector or moved into other parts of the economy as they changed jobs, and which workers did what? Next, considering the nature of the new employment of those who did take non-factory jobs, what kinds of enterprises and occupations did they go into? Did a move into agriculture play a special role in re-employment? Turning to the factory sector and still at a very general level of analysis, were those who remained in the factory sector generally re-employed in large-scale factories, or did they move into smaller-scale units? Did they stay within the same industry, or move into a factory manufacturing a totally different kind of product? From here on the discussion will focus much more on the actual transfer of skills and the similarity of occupations, both with reference to all workers and in an analysis of what kinds of workers did and did not transfer skills.

Leaving the Factory Sector

Do the data indicate that an industrial proletariat was developing? Or to put the question a bit more precisely in terms of the information in this study, when workers had once worked in a large-scale factory, did they tend to move to another factory when they changed jobs? Did employment in a large-scale factory have a ratchet effect, with workers tending to move among factories rather than in and out of factory employment?

To begin with, the earlier study found that the factories were not restricting their intake to workers who had prior experience in factory employment: less than half (44.1%) of the workers in the old factories had had factory experience when they were hired. This lack of a sharp boundary around the factory sector seems to have applied as well to labor turnover. The proportion of those who remained in the factory sector in the next jobs is remarkably similar to the proportion hired without factory experience into the 1957 jobs, 41.6%. Even adding the 16 workers whose first re-employment was in a non-factory job but who by the time of the survey had returned to factory employment, the proportion of those leaving these large-scale factories but remaining in the factory sector was still only 50.2%. Clearly the ratchet effect is not very great.

As noted earlier, there is a rather substantial body of literature concerned with what is referred to as under-commitment, the presumed lesser psycho-

logical attachment to factory labor among workers in developing countries compared with those in the West. In the analysis of turnover rates, it was argued that this concept had little empirical meaning, but it is of interest to ask whether this rather substantial rate of departure from the factory sector supports the notion of low commitment to factory work of workers in India. These data give weak if any support to the low worker commitment hypothesis. Only about half (49.5%) of those leaving the factory sector indicated that they liked the non-factory job better than the factory one, and fully two-thirds (64.4%) said that they would take the old job back if it were offered. On the other hand, less than a third (32.5%) of those who went on to another factory job would have liked to have had the old job back. In addition, if a low degree of psychological attachment were the explanation, one would expect most of those leaving the factory sector to have done so on their own initiative. It turns out, however, that a much larger percentage (73.2%) of involuntary leavers than of voluntary leavers (39.1%) took a non-factory next job.

Table 3.10 presents the percentage of workers of each type who left the factory sector, and the logit and OLS coefficients indicating the residual effect of each variable, with the others held constant. These data indicate that a few variables played an important part in determining who did and who did not find re-employment in a factory. First of all, which factory the worker had been employed in played a major role. Workers leaving the engine factory, the most modern of the factories and the one whose workers had the most generalizable industrial skills, were significantly more likely to go to other factory jobs — 60.6% as compared with the general average of 41.6% — and this difference is substantial as indicated by the regression analyses. Similarly, those leaving the paper mill were much less likely to be re-employed in factories. Paper mill workers were mainly engaged in feeding and maintaining large raw materials processing machines and had the least transferable industrial skills. What was true of differences in factory-specific industrial skills was also true of skill differences within the factories. In general, basic wage differences in the old factories reflected differences in skill level, and those who went on to other factory jobs had a mean wage at the time of the departure which was Rs. 26.18 higher than those who left the factory sector. And in addition to industrial skills, education could also serve as career capital to enable the worker to remain in the factory sector. Even controlling for factory and all other variables, those with no education were considerably less likely to be rehired into a factory.

What about non-skill-related variables? Did they predict interfactory movement as well? A few personal characteristics such as being a Brahman or a younger worker seem to have made a difference in the tabular analysis.

TABLE 3.10
Predictors of Getting Next Job in Factory

Variable	% Factory Job	Coefficients	
		LOGIT	OLS
All Leavers	41.6		
Brahman	54.2*	1.16	0.18
Harijan	40.7	0.44	0.84
Education		1.20**	0.20**
No Education	22.8**		
Up to 10th Standard	50.0		
Matric Plus	34.2		
Birthplace		0.29	-0.06
Pune	39.2		
Other Maharashtra	43.9		
Non-Maharashtra	40.4		
Single	52.6*	0.48	0.08
Age Difference (Yrs.)	-2.36	-0.14	-0.25
First Job	38.3	0.85	0.14
Seek Factory Job	42.8	0.23	-0.04
Factories			
Textiles	31.7	-1.44	-0.24
Paper	28.1*	-1.46	-0.26
Engine	60.6*		
Biscuit	69.2	0.06	0.02
Rubber	47.7	-0.54	-0.10
Wage Difference (Rs.)	+26.18*	0.01*	0.002*
Occupation			
P & M Worker	43.1		
Supervisor	51.7	0.32	0.05
Clerk	26.3	-1.54	-0.27

TABLE 3.10 (cont.)

Variable	% Factory Job	Coefficients	
		LOGIT	OLS
Permanent	42.2	-0.04	0.01
Job Satisfaction			
Pr. Component 1		-0.33	-0.06
Pr. Component 2		-0.03	-0.004
Pr. Component 3		-0.09	-0.02
Family Job Satisfaction			
Good	50.0		
Fair	50.0**		
Bad	28.8**		
Voluntary Leavers	50.9**	0.98*	0.18*
Year Left Difference (Mos.)	+5.73	0.23	0.04
Written Application	55.7**	0.91*	0.17*
Used Employment Exchange	49.3	0.64	0.10
Friends/Relatives Helped	52.6*	0.84*	0.16*
R²			0.32

but their effect disappeared when all the other variables were introduced into the equation. Attitudinal variables, as measured by the worker's reported satisfaction with the job, were not significant predictors. However, if the worker reported that his family did not like the job, he tended to move out of the factory sector. The greater importance of the family's satisfaction with the job than that of the worker himself occurs again and again in this study and is an interesting finding in itself.

Moreover, search mechanisms also seem to have been related to whether the new job was in or out of the factory sector. While registration with the employment exchange seems to have made little difference one way or another, those who filed formal applications tended to be re-employed in a factory, although the success of formal applications probably reflects the employer's rather than the applicant's preference. However, it is interesting to note that the workers using personal influence, the help of friends or

relatives, tended to be re-employed in another factory. This reinforces the earlier observation that remaining in the factory sector was the preferred outcome of the search for a new job, and those with resources, in this case personal connections, found new factory jobs, while those who had no resources — transferable industrial skills, education, personal connections — did not. Later, this section will report that those rehired into another factory were much less likely to say that they would take the old job back if it were offered, and much more likely to say that they had improved themselves in the job exchange — yet another indication that most workers left the factory sector not by choice but by default.

Non-Factory Jobs

Having determined who moved out of the factory sector and who did not, the analysis now turns to the kinds of jobs occupied by those finding non-factory work. Using the first-digit classification of the Standard Industrial Classification (SIC), Table 3.11 indicates the nature of these non-factory jobs.

TABLE 3.11
Occupation in First Re-employment of Workers
Moving Out of Factory Sector

Occupational Classes	Number	Percentage
Professional, Technical	4	3.7
Administrative, Executive, Manager	4	3.7
Clerical	18	16.7
Sales Workers	15	13.9
Farmers, Gardeners	34	31.5
Miners, Quarrymen	1	0.9
Transport	4	3.7
Artisans, Manufacturing	12	11.1
Laborers	13	12.0
Service Workers	<u>3</u>	<u>2.8</u>
All Workers	108	100.0

The most frequently held non-factory job was agriculture; almost a third (34) of the workers who left the factory sector found their first re-employment there. It should not be concluded, however, that this represented a flight from the factory back into agriculture. In the first place, only eight of the original 823 in the 1957 sample had ever worked in agriculture, so that for most of the 34 workers in Table 2.21 the new job in agriculture was not a return to the farm, but a first employment there. Second, three of the 34 were Malis – gardeners, who came under the category of agriculturists in the Standard Occupational Classification (SOC), but were not farmers in the usual sense of the term. Third, only 15 percent of all leavers found their next re-employment in agriculture. Fourth, 21 of the 31 who went into farming had been employed in a single factory, the paper mill, which, as noted, was situated at the urban fringe surrounded by villages. For the workers in most of the factories, agriculture was not an attractive alternative occupation. Fifth, agriculture seems not to have been a satisfying alternative occupation even for those who went into it. All workers who shifted to agriculture reported a considerable loss of income. All but six stated that they preferred the former jobs to farming and would take the old jobs back if they were offered, and in fact 19 of the 31 did return to non-agricultural employment after spending some time on the farm. Only three of those who were employed in agriculture, however, had found their way back into a factory by the time of the study.

For most of these workers, then, agriculture seems to have been only a slight step up from unemployment, and in fact the workers who were re-employed in agriculture resembled in many ways those who remained permanently unemployed – the old, the sick, the uneducated, and those who were dropped by the company rather than quitting voluntarily. Most did not leave the factory of their own volition – nine left because of old age and sickness, 11 were retrenched, and two were fired for cause. Workers who went into agriculture tended to be considerably older than the general set of workers – 34.8 years old on the average, as compared with 30.0 years for those going into non-agricultural jobs. They tended to have very little education – 13 of the 31 had no education at all, another 10 had gone to school – only up to the fourth standard, and the rest had no more than a primary education. Like the unemployed, then, they comprised the old, the sick, and the uneducated, and they were discharged at the company's will rather than their own.

The other non-factory jobs were dispersed throughout the employment structure, just as were the jobs the workers held before moving into the 1957 jobs. When the original study was conducted in 1957, the sheer range of occupations found in the experience of the sample was striking. A partial list

included: ink factories, domestic service, oil mills, cinema houses and studios, sugar factories, newspapers, banks, police, military, railways, schools, grocery stores, hydro-electric supply companies, dispensaries, bus lines, hotels, stone cutters, air lines, *bidī* works, bakeries, docks, *pān* shops, soap factories, tonga-wallas, cycle marts, tire makers, fire brigades, cement factories, chemical factories, insurance companies, lumber companies, and the telephone exchange.²

Several of these employers were, of course, factories, but it is apparent that the workers in their previous employment had been part of the highly variegated work force characteristic of Indian cities. Turning to the new study, when the workers left the factory jobs, many of them fanned out again into these services, sales and petty production occupations. A representative list of next occupations outside the factory sector would include peon, gardener, press compositor, sand digger, *bidī* roller, bank clerk, mason's helper, cement mixer, flower garland maker, driver, coolie, fisherman, laboratory assistant, teacher, tailor, boiler attendant, silk dyer, masseur, bone setter, *pān*-walla, rickshaw-walla, milkman, bullock cart driver, midwife, shoe maker, cycle repairman, wool spinner, miller, *ḍibbā*-walla, furniture maker, iced fruit salesman, and makeup artist. Whatever else can be said about these occupations, it is at least clear that work in a large-scale factory does not seem to have limited the occupational range of workers as they changed jobs.

Factory Jobs

What of the workers who stayed in the factory sector? How did previous employment affect the kind of factory they were likely to go into? For instance, did they tend to stay in large-scale factories, or did they fan out through the smaller factories that make up the bulk of the industrial units in Pune? Of those who remained in the factory sector, there seems to have been some tendency for workers to continue working in large-scale industrial units. 72.7% of those re-employed in factories were in units of more than 100 workers, like all of the factories that they left. Table 3.12 shows the distribution by size class of the factories in which the workers found the next jobs.

Aside from size, what else characterized the factories in which the workers were re-employed? It is surprising to note that only eight workers

² Richard D. Lambert, *op. cit.*, pp. 61-62.

TABLE 3.12
Size of Factory of First Employment

Size	Number	Percentage
Only Worker	2	2.6
Up to 10 Workers	5	6.5
Up to 25 Workers	5	6.5
Up to 100 Workers	9	11.7
Up to 500 Workers	27	35.1
Up to 1000 Workers	9	11.7
Over 1000 Workers	<u>20</u>	<u>26.0</u>
All Workers	77	100.0

found jobs in any of the new factories that were arriving in such substantial numbers in the Pune area during the period of the survey. One would have thought that with the sudden expansion of demand and the relatively high wages these factories were paying, many more workers would have been attracted from the older factories into the newer ones.

Almost 20%, 15 workers in all, found their way into the two large government-owned factories in the area, an ammunition factory and a penicillin factory. Only seven of the workers moved from one to another of the five sample factories. Most remained in the Pune area for the next factory job — only 20 workers or 26.0% secured a job in a non-Pune factory.

Did turnover tend to be industry-specific? Did workers tend to stay within the same industry when they changed jobs? This is part of a larger question of the transfer of skills from one job to another, and it will be addressed a little more fully below. Here let it be noted that the general answer to the question for factory-to-factory job changes is no. Table 3.13 presents the distribution of workers according to industrial category of the factory in which they were re-employed. The categories are drawn from the Standard Industrial Classification, using the two-digit level of specificity. The asterisks indicate the categories into which the sample factories fall.

Except for textiles, there was no obvious congregation of workers in those industrial categories represented by the factories in the samples. This lack of industrial specificity of job exchanges can be dramatized further by the telescoping property of the Standard Industrial Classification, in which the first digit represents broad industrial categories, the second digit general divisions within these categories, and the third digit the most finely tuned

TABLE 3.13
Industrial Class of Factory of First Re-employment

	Number Workers
Food Products*	1
Edible Fats	2
Textiles*	8
Paper Products*	1
Rubber Products*	0
Printing	1
Leather Products	4
Rubber Products	2
Petroleum and Coal	3
Non-Metallic Minerals	14
Basic Metals	1
Metal Products	1
Machinery*	4
Electrical Equipment	16
Transport Equipment	4
Miscellaneous Manufacturing	6
Other	<u>11</u>
TOTAL	77

TABLE 3.14
Similarity in Standard Industrial Classification
of Old and Second Factory

Degree of Similarity	No. of Workers	Percentage
Same in All Digits	4	5.2
Differ in 3rd Digit Only	15	19.5
Differ in 2nd Digit	54	70.1
Differ in 1st Digit	4	5.2

divisions. For instance, category 3 is one of the broad categories in manufacturing, category 35 comprises 'industries manufacturing metal products other than machinery and transport equipment,' and category 354 represents 'manufacturers of hand tools.' The digit(s) in which the Standard Industrial Classifications of the factory left and the new factory differ can supply some measure of the similarity between the industries involved in the exchange: those in which no digits or only the third digit differ have the greatest similarity, and those differing in the first digit the greatest dissimilarity.

Since this comparison is limited to workers re-employed in factories, the industries all tend to fall within the manufacturing classification in which only the two first digits are used. Hence first-digit differences are less meaningful than when the full range of industries from agriculture to services is included, as will be true when non-factory jobs are included in the analysis. Accordingly, the important thing to note from Table 3.14 is that fewer than one in four workers (24.7%) moved between factories in either the same or a related industrial category.

Skill Transfer

One of the most important aspects of the exchange of jobs in the old factory market is the extent to which skills utilized in the old job were transferred to the new one. Skill learning represents an investment on the part of both the employer and the worker. Did this investment carry over from one job to the next?

For those moving into non-factory jobs, the general answer is no; they neither moved back into occupations they formerly practiced, nor did the new employment have much to do with work performed in the old factory. There are both objective and subjective measures of the extent to which occupational carryover took place. For the first, those re-employed outside the factory sector were asked whether they had ever before done the kind of work they were doing in the new jobs, including work in any jobs prior to the 1957 one. Only 30.7% indicated that they had earlier been employed in the same kind of work. For the objective measure, the Standard Occupational Classifications of the new and the old jobs were compared. Only 26.7% of the new jobs showed any similarity whatsoever to the jobs held in the old factories, and most of those who did remain within the same or related occupations were clerks. In short, to most workers a move out of the factory sector meant a radical shift in occupation.

Did the workers re-employed in another factory carry any skills with them into the new jobs? A general answer to this question can be gleaned from noting the skill level of the job into which the worker moved. Table 3.15 indicates for the 77 workers re-employed in a factory the skill level of the first jobs they held in that factory.

TABLE 3.15
Entry Skill Level for Those Re-employed in Factories

Skill Level	Textiles	Paper	Engine	Biscuit	Rubber	Total
Unskilled	4	4	—	1	4	13
Semi-skilled	2	2	—	2	2	8
Skilled	7	7	15	5	8	42
Supervisor	2	1	3	1	2	9
Clerk	<u>0</u>	<u>0</u>	<u>1</u>	<u>1</u>	<u>3</u>	<u>5</u>
TOTAL	15	14	19	10	19	77

It is clear that for workers leaving all factories, only a few (13) of those who moved into another factory entered at the unskilled level. The bulk of those employed at low-skill levels in the old factories either left the labor market, or moved to the non-factory sector in the next jobs. The most common (42 out of 63) entry-level job for production and maintenance workers who shifted to another factory was skilled worker. Therefore some skill transfer was clearly taking place in the factory-to-factory movement.

A closer look at the Table points to considerable differences among factories in the extent to which workers went on to skilled jobs in another factory. Clearly, the workers from the engine factory had the highest skill level profile in their next factory employment; indeed, all of the production and maintenance workers from the engine factory went into skilled jobs when they transferred to another factory. Workers from the other factories spread more evenly across the skill levels. For all but the textile mill, this is not surprising. The 1957 study found that a large proportion of the total work force in the paper, biscuit, and rubber factories was at the unskilled level: 43.2%, 47.2% and 73.4% respectively. Moreover, there were no manufacturing units in the same industry within the Pune metropolitan area. In the textile mill, however, the largest proportion of workers (43.5%) were at the semi-skilled level, mainly weavers, and there were large concentrations of mills

not too far away in Bombay and Sholapur. A larger skill transfer might have been expected moving from the textile mill to another factory.

Another way to look at skill transfers is to consider those workers who held semi-skilled or skilled jobs in the old factories, leaving out those in unskilled jobs as having little skill to transfer, and examining the extent to which they went into other jobs — whether or not in the factory sector — that *prima facie* seems to have had some similarity to the work they were doing in the former factory. Table 3.16 presents such an analysis.

The Table shows that, first of all, clerks were re-employed, and except for those leaving the paper mill, they all tended to remain clerks, whether in or out of the factory sector, and whether or not they were relocated in the same industry. What happened to the supervisors depended upon the transferability of skills from a particular factory, although in general they were more likely to transfer skills than the production and maintenance workers. There was almost no skill transfer from the paper mill. Its workers either dropped out of the labor market, or took jobs totally unrelated to the old ones. In contrast, all but one of the workers who held skilled jobs in the engine factory went on to similar jobs elsewhere. The other factories fell in between. Once again, there was surprisingly little transfer of skills among those leaving the textile mill. Only five out of 28 skilled and semi-skilled workers leaving the factory went into similar jobs in other mills. Even among supervisors, more left the labor market than got similar jobs elsewhere.

To give some of the flavor of these differences in skill transfer, Table 3.17 presents for each factory the next job held by its semi-skilled and skilled workers. An 'x' before the occupation indicates that it is considered similar to the job the worker held in the old factory. Numbers in parentheses indicate that more than one worker was rehired into the occupation.

The comparisons in Tables 3.14 and 3.16 are based on the similarity of occupational titles, but it is, of course, possible that a worker moved into an occupation that appears similar but utilized few of the specific skills acquired in the old job. On the other hand, the job title may be dissimilar, but a worker may still have used some old skills in the new job. The former is particularly true of clerks who remained clerks and therefore had objectively similar occupations, but who may have become bank clerks or typists in a research institute, to choose two actual examples, and thus felt that the skill transfer was minimal. In the latter case, even a worker rated as unskilled in the old factory may have felt that he was carrying over some experience into the new job. Hence turning to the selectivity question of who transferred skills, the analysis will rely on the worker's own estimation of skill transfer. Table 3.18 presents the single variable and regression analyses of correlates of skill transfer as reported by the workers themselves.

TABLE 3.16
 Similarity of Next Job for Semi-skilled and Skilled Workers

Company and Occupation	Similar	Dissimilar	Unemployed	Total
Textiles				
P & M Workers	5	16	7	28
Supervisors	5	0	7	12
Clerks	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
TOTAL	10	16	14	40
Paper				
P & M Workers	1	15	4	20
Supervisors	0	11	3	14
Clerks	<u>0</u>	<u>3</u>	<u>0</u>	<u>3</u>
TOTAL	1	29	7	37
Engine				
P & M Workers	8	3	0	11
Supervisors	4	0	1	5
Clerks	<u>4</u>	<u>0</u>	<u>0</u>	<u>4</u>
TOTAL	16	3	1	20
Biscuit				
P & M Workers	0	2	2	4
Supervisors	2	1	0	3
Clerks	<u>1</u>	<u>0</u>	<u>1</u>	<u>2</u>
TOTAL	3	3	3	9
Rubber				
P & M Workers	1	4	0	5
Supervisors	0	1	1	2
Clerks	<u>4</u>	<u>1</u>	<u>0</u>	<u>5</u>
TOTAL	5	6	1	12
GRAND TOTAL	35	57	26	118

TABLE 3.17
Next Job of Semi-skilled and Skilled Workers

Textiles

x Weaver (2)	Wireman
x Machine Repair, Textile Mill	Stove Repairer
x Supervisor, Textile Mill	Garland Maker
x Silk Dyer	General Merchant
Wool Cleaner	Coolie, Bus Stand
Laborer, Ammunition Factory	Fisherman
Agriculturist (4)	Milkman
Mason's Helper (2)	

Paper

x Finisher, Paper Mill	Watchman
Brass Painter	Weaver, Textile Mill
Tile Maker	Agriculturist (7)
Beam Carrier, Textile	Maternity Nurse
Moulder, Foundry	Coolie

Engine

x Fitter (3)
x Grinder
x Instrument Mechanic
x Turner (3)
x Machinist
Life Insurance Agent
<i>Bidfi</i> Roller

Biscuit

Engine Assembler
Electric Supervisor

Rubber

x Chemist, Rubber Factory
Agriculturist (2)
Accountant
Wireman

TABLE 3.18
Predictors of Skill Transfer

Predictor	% Transfer	Coefficients	
		LOGIT	OLS
All Workers	31.9		
Brahman	37.5	0.70	0.09
Harijan	14.8*	-0.71	-0.06
Education		0.57	0.05
No Education	5.7*		
Up to 10th Standard	35.7		
Matric Plus	44.7*		
Birthplace		0.22	0.03
Non-Pune	19.6		
Other Maharashtra	36.6		
Non-Maharashtra	36.5		
Single	36.8	0.31	0.01
Age Difference (Yrs.)	-0.55	-0.19	-0.02
First Job	30.1	-0.21	-0.01
Seek Factory Job	32.9	0.35	0.01
Factory			
Textiles	29.3	-1.67*	-0.29*
Paper	10.5**	-2.74**	-0.44**
Engine	63.3*		
Biscuit	30.8	-1.37	-0.21
Rubber	40.9	-0.37	-0.08
Wage Difference (Rs.)	+46.8**	0.01*	0.002**
Occupation			
P & M Workers	29.2		
Supervisor	48.3*	0.20*	0.02*
Clerk	26.3	-1.53	-0.24

TABLE 3.18 (cont.)

Predictor	% Transfer	Coefficients	
		LOGIT	OLS
Permanent	26.3	0.07	0.15
Job Satisfaction			
Pr. Component 1		-0.47	-0.02
Pr. Component 2		-0.14	-0.02
Pr. Component 3		-0.19	-0.25
Family Job Satisfaction		0.35	0.06
Good	26.0		
Fair	37.0		
Bad	30.0		
Voluntary Leavers	41.2	0.14	0.07
Year Left Different (Mos.)	+2.4	0.14	0.02
Written Application	45.6**	1.33**	0.23*
Used Employment Exchange	25.4*	-1.02*	-0.15*
Friends/Relatives Helped	38.6	0.71	0.10
R²			0.34

The first column shows the importance of occupation, particularly the greater skill transfer among supervisors and the fact — indicated by the uniformly negative signs — that the workers who left the engine factory had a significantly greater tendency to move into similar jobs than workers who left any of the other factories. Wage differences reflected differences in skill level, and those with a higher wage in the old company were more likely to report a skill transfer. Harijans reported little skill transfer, presumably because they occupied the lowest skill and educational levels and had little skill to transfer. On the other hand, matriculates were more likely to transfer skills, and those who left voluntarily also reported a higher percentage of skill transfer. Once again, the year the worker entered the job market seems to have made little difference in skill transfer, indicating no effect of the newly expanded job market.

One of the most interesting findings is the importance of the means of

job search. Those who filed written applications were much more likely to transfer skills, while those who sought a new job through the government employment exchange were more likely to change their jobs completely. The important effect of these job search strategies continued even when all other variables, including education, occupation, factory, and skill level, were held constant. Clearly, if the worker wanted to stay in the same general occupation, he should have filed as many written applications as possible and stayed away from the employment exchange.

The effect of several of the other variables disappeared when other predictors were held constant. For instance, being a Harijan lost its impact when factors like education, previous factory, and wage level were held constant. Similarly, education and birthplace had little independent effect. Those factors that do seem to have had an independent effect on the likelihood of skill transfer are the factory in which the worker was employed, the skill level he occupied in that factory, and how he went about looking for a new job. For the transfer of skills, in contrast to most other outcomes in the job exchange, it was variables related to the workplace rather than personal characteristics that were important. But then only less than a third of the workers actually transferred any skills from the old to the new job.

Wages and Job Change

One of the most common assumptions about workers' mobility in the job market is that they move in order to improve their earnings. The evidence from this study, however, indicates that more workers lost money in changing jobs than gained it. Only 34.4% of the workers increased their wages by leaving the old jobs, 38.8% if the permanently unemployed are excluded. Rather than wage gain or loss being the primary feature of job change, there seems to have been an overall decrease in wage level, but individual workers seem to have reproduced their *relative* standing in wages *vis-à-vis* fellow workers. That is to say, there was a very high correlation between the distribution of the worker's wages in the old and the new jobs. To put it another way, the average wage declined but the relative position of individual workers remained roughly the same. This relation is even more striking when the comparisons are made within the factory groups, that is, textile mill leavers with other textile leavers, and so on. Table 3.19 presents the simple correlation coefficients between wage in the old and new jobs for all leavers and for those within each factory.

TABLE 3.19
Correlation of Departure Wage with New Job Wage
(Unemployed Excluded)

Factory	R ^a	Number of Cases	Mean
Textiles	0.76**	41	
Departure Wage			120
New Job Wage		109	
Paper	0.40**	57	
Departure Wage			117
New Job Wage		62	
Engine	0.82**	30	
Departure Wage			176
New Job Wage		179	
Biscuit	0.71**	13	
Departure Wage			139
New Job Wage		148	
Rubber	0.64**	44	
Departure Wage			91
New Job Wage		136	
All Five Factories Taken Together	0.67**	185	
Departure Wage			123
New Job Wage		115	

a=A simple Pearsonian correlation coefficient, r

**=Significant at P.01 level

Table 3.20 presents an analysis of the difference between those who gained wages when they changed jobs and those who lost. It illustrates vividly the potential contrast between the influence of variables when they are taken one at a time, and the effect of the same variables when all others are held constant. Clearly, for instance, Brahmans leaving the factory had a

greater chance of improving their wages and Harijans a lesser chance compared with members of other castes. When other variables are held constant, however, this apparent effect of caste rank disappears. The same is true of marital status, age, having worked in the paper mill, having left the job voluntarily, high family satisfaction with the job, and having filed a written application in the job search. Workers with all these characteristics (taken one at a time) did have a significantly different chance of gaining wages in a job change.

Looking at the logit and OLS columns, however, it is clear that the overwhelming determinant underlying all of the other relations is education. A worker with no education was very likely to have lost wages in the job transfer; if he was a matriculate or above, the chances were very high that he had gained. Among the other variables distinguishing between wage gainers and wage losers, with the rest held constant, is the permanency of the old job – temporary workers who were often employed part time increased their wages by a job transfer. It is interesting that the factory employment did not have more of an overall effect on the likelihood of wage gain. The low proportion of wage gainers in the paper mill clearly reflected the low level of education and wages in that factory, and disappears when these variables are held constant. The rubber factory, however, had a high proportion of educated workers and a low wage level and thus, as noted earlier, a very high rate of voluntary departures. Even with these variables held constant, however, its employees were more likely to experience a wage increase as they shifted jobs.

Once again, it should be noted that the year in which the worker entered the job market made little difference in the likelihood of wage gain, a further indication that the increase in demand resulting from the influx of new factories had little effect on the wage prospects of workers leaving these older factories. It should also be noted that the wage level of the worker in the old factory did not determine the likelihood of his gaining in wages. This is a further elaboration of the point made earlier, that the wage levels of the factories reproduced themselves, and for a worker at a particular wage level, the chances of wage improvement were close to even. In similar fashion, whether one was a supervisor, clerk, or regular worker would determine what the absolute level of the next wage would be, but not whether it was a gain or loss in comparison with the old wage.

To repeat, in general, these data do not support the hypothesis that workers were seeking – much less getting – higher wages in the job transfer. Now it can be added that, in general, the only worker characteristic that seems to have been important in improving the chances for a wage gain was level of education.

TABLE 3.20
Predictors of Wage Gain in Next Job

Variable	% Gained Wages	Coefficients	
		LOGIT	OLS
All Leavers	39.5		
Brahman	58.3**	0.05	0.01
Harijan	18.5*	-0.15	0.004
Education		1.01*	0.14*
No Education	14.3**		
Up to 10th Standard	36.6		
Matric and Above	71.1**		
Birthplace		-0.60	-0.07
Pune	35.3		
Other Maharashtra	45.1		
Non-Maharashtra	34.6		
Single	63.2**	0.30	0.07
Age Difference (Yrs.)	-5.82**	-0.14	-0.02
First Job	42.5	0.21	0.03
Seek Factory Job	41.0	-0.21	-0.004
Factories			
Textiles	31.7	0.25	0.28
Paper	10.5**	-1.18	-0.14
Engine	43.3		
Biscuit	61.5	0.63	0.14
Rubber	75.0**	1.89**	0.34**
Wage Difference (Rs.)	-5.57	-0.0001	-0.0001
Occupation			
P & M Worker	38.1		
Supervisor	39.3	1.27	0.15
Clerk	50.0	-0.83	-0.13

TABLE 3.20 (cont.)

Variable	% Gained Wages	Coefficients	
		LOGIT	OLS
Permanent	35.6	-1.22*	-0.15*
Job Satisfaction			
Pr. Component 1		-0.13	-0.02
Pr. Component 2		-0.04	-0.04
Pr. Component 3		-0.35	-0.04
Family Job Satisfaction		-0.52	0.65
Bad	40.0		
Fair	51.1		
Good	24.7*		
Voluntary Leavers	51.8*	0.65	0.09
Year Left Difference (Mos.)	+3.04	0.02	0.01
Written Application	54.4**	0.56	0.10
Used Employment Exchange	43.7	-0.42	-0.09
Friends/Relatives Helped	38.6	-0.39	-0.05
R ²			0.38

Interrelation of Job Change Features

So far, the outcomes of job changes have been dealt with individually, as if each outcome were independent of the other. The analysis has considered how well the worker characteristics predicted, in turn, duration of the job search; location of the new job in or out of Pune, movement in or out of Pune, movement in or out of the factory sector; extent of skill transfer; and wage change. For the worker, of course, these are all features of one job change, and it would help to know whether any of these five individual outcomes tended to go together. For instance, was a worker who moved out of Pune or whose next job was in a factory likely also to gain wages or to use old skills? Table 3.21 presents partial correlations of the five features of the job change. When

all worker characteristics are controlled, these correlations measure the relationship between the variables that remain after their common determinants and correlates have, as it were, been removed.

TABLE 3.21
Correlation Among Job Change Features

	Long Search	Non-Pune Job	Next Job in Factory	Used Old Skills
Long Search	1.00			
Non-Pune Job	.04	1.00		
Next Job in Factory	.25	.09	1.00	
Used Old Skills	.06	.14	.35	1.00
Wage Gained	-.09	.18	.14	.33

Overall, they are a bit lower than might have been expected. It might reasonably have been expected, for instance, that a job would have been sought outside of Pune after the search in Pune had been exhausted, and thus that a long job search would have been correlated with a non-Pune job. Similarly, a larger correlation might have been anticipated between the length of the search or re-employment in or outside the factory sector, and a gain in wages. But getting another factory job seems to have taken longer than getting a non-factory job; and it resulted in the use of old skills, which in turn resulted in higher wages. The rest of the inter-relationships are rather modest.

Subjective Job Comparisons

Having dealt with a set of what might be called objective characteristics of the new job — re-employment in or out of the factory sector, skill transfer, wage change — the analysis now turns to some subjective comparisons of the old and new jobs. How did the workers themselves evaluate their new job and the job change? From their perspective, was the new job better than the old one or worse, and in what respects? Workers were asked to compare the old and new jobs both generally and as to specific items. To insure com-

parability and to allow the workers to settle into relatively long-term re-employment, they were asked to compare the job held in the old factory with the job held at the time of the study, rather than with the first job taken after leaving the old factory. One effect of this was to drop from the sample seven more workers who had been re-employed at some time between 1957 and 1963, but who were not employed as of 1963. The statistical tests showed, however, that this made little difference in the outcomes discussed below.

As for global comparisons between the old and new jobs, first, they were asked whether they thought they had improved themselves through the job change. About half the workers (52.4%) indicated that they had. Almost the same proportion (52.7%) indicated that they would not take the old job back if it were offered. And similarly, 56.3% of the workers, directly comparing the two jobs, rated the new one better. This means, of course, that about half the workers overall liked the new job better; it also means that half did not. Either the workers were misguided in their expectations about the next job, or these data imply that job improvement for many workers was not the prime motivation for the job change.

Workers' specific comparisons of the two jobs show a somewhat more variegated pattern than the overall ratings given above. Table 3.22 displays the proportion of workers who rated one job above the other or the two as equivalent on each of six dimensions.³

It is interesting to note that on none of the attitudinal items did a substantial majority of the workers report that the new job was better than the old. On a few — chances for advancement, job security, and nearness to residence — approximately half the workers felt that the new job was better. On most, however, only a third or fewer of the workers felt that the new job was distinctly better than the old one. The high proportion of workers (66.3%) who saw no difference between the two jobs in relative wage levels reinforces the finding that wage improvement did not play a strong role in job mobility. It can now be further stated that no other single aspect of job comparison emerged as a very strong element in job change; to put it more precisely, in no specific aspect of job satisfaction did workers report overwhelmingly that they liked the new job better than the old one. In most cases, the workers saw little or no difference between them.

While this is true in general, it is still of interest to determine what kind

³ Since answers to attitudinal questions are notoriously dependent upon the way in which the question was asked, the reader should check the Questionnaire reproduced in Appendix C.

TABLE 3.22
Comparisons of Old and New Jobs

Comparison	Number	Percent
Opportunity for Advancement		
Old Job Better	70	39.3
Both the Same	21	11.8
New Job Better	87	48.9
Job Security		
Old Job Better	34	19.1
Both the Same	62	34.8
New Job Better	82	46.1
Pay		
Old Job Better	30	16.9
Both the Same	118	66.3
New Job Better	30	16.9
Relationship with Top Management		
Old Job Better	21	11.8
Both the Same	135	75.8
New Job Better	22	12.4
Relationship with Peers		
Old Job Better	28	15.7
Both the Same	127	71.3
New Job Better	23	12.9
Pleasantness of Work Performed		
Old Job Better	57	32.0
Both the Same	55	30.9
New Job Better	66	37.1
Relationship with Supervisors		
Old Job Better	32	18.0
Both the Same	123	69.1
New Job Better	23	12.9

TABLE 3.22 (cont.)

Comparison	Number	Percent
Hours of Work		
Old Job Better	62	34.8
Both the Same	63	35.4
New Job Better	53	29.8
Nearness to Residence		
Old Job Better	53	29.8
Both the Same	29	16.3
New Job Better	96	53.9
Effectiveness of Unions		
Old Job Better	69	39.8
Both the Same	83	46.6
New Job Better	26	14.6

of workers did see the new jobs as better than the old ones, and in what respects. We consider only the more subjective points of comparison. Differences between the two jobs in pay, hours of work, nearness to residence, and effectiveness of unions relate more to the objective dimensions discussed above, not the job. The remaining questions can be grouped along two *a priori* dimensions of relative job satisfaction: those relating to interactions with superiors and fellow workers, and those relating to perceptions of the attractiveness of the job *per se* — the chance for advancement, the security of the job, and the pleasantness of the actual work. And indeed, it is just these two dimensions that emerge from a factor analysis of the items as shown in Table 3.23.

A similar set of principal components on the attitude scale items was found in the 1957 study. Table 3.24 presents the regression of these two factors on the basic set of worker characteristics and job related variables. Since the criterion variable is continuous, the logit analysis is inappropriate. Once again, all other characteristics are held constant as the predictive value of each worker characteristic is examined in turn. Asterisks indicate when the predictive value is statistically significant.

The major finding of this analysis is that the most potent predictor of a worker's preferring the new job to the old, with respect to both work-related factors and interpersonal relations, was his attitude toward the old job. If he liked the old job as measured by the first principal component, the less likely he was to find things like advancement, security, and pleasantness of work

TABLE 3.23
Rotated Factor Loadings of Job Comparison Dimensions

Dimension	Factor 1 Interpersonal	Factor 2 Job Related
Relationships with Top Management	0.870	0.100
Relationships with Supervisors	0.826	0.222
Relationships with Peers	0.838	0.182
Chance for Advancement	0.140	0.850
Job Security	0.142	0.846
Pleasantness of Work	0.194	0.743

TABLE 3.24
OLS Regression on Job Comparison Factors
on Worker Characteristics

Characteristic	Interpersonal	Job Related
Brahman	0.06	0.19
Harijan	-0.13	0.12
Education	0.13	0.02
Non-Pune Born	0.19	0.12
Single	0.20	0.10
Age	0.03	-0.08
First Job	0.12	0.14
Seek Factory Job	-0.34	-0.12
Textiles	0.22	0.93
Paper	0.16	-0.39*
Biscuit	-0.33	-0.53
Rubber	0.72**	-0.37
Wage	-0.001	0.0002

Characteristic	Interpersonal	Job Related
Supervisor	0.11	0.34
Clerk	-0.75	0.15
Permanent	0.17	-0.17
Job Satisfaction		
Principal Component 1	0.26**	-0.18**
Principal Component 2	-0.01	0.07
Principal Component 3	-0.11	0.06
Family Job Satisfaction	-0.12	-0.22*
Voluntary Leaving	-0.18	0.35*
Year Left	-0.05	0.03
Written Application	-0.06	0.34*
Used Employment Exchange	0.23	0.68
Friends/Relatives Helped	-0.03	-0.56
R ²	0.22	0.37

more satisfying in the new job; however, he was likely to find his interpersonal relationships improved in the new job. Once again, the worker's family's evaluation of the old job also emerged as a good predictor: the better the worker's family liked the old job, the less likely he was to prefer the new job. In the family's reckoning, however, interpersonal relations played little part in this comparison; it was the other features of the new job that mattered.

A few other correlations deserve comment. Paper mill workers liked the old jobs better than the new ones — this is the factory with a large number of workers who had little education and were forced to fall back on agriculture or the urban fringe occupations; and interpersonal relations in the rubber factory seem to have been poor. Clerks found their co-workers and superiors less amicable in the new jobs, and those who found re-employment through written applications, seem to have liked the new job better. Of special interest is the fact that those who left the old factory voluntarily seem to have liked the new job better, showing some evidence of the pull of a better job in at least

some of the workers' decisions to leave the old one. None of the other worker characteristics seems to have emerged as an efficient predictor, not even education, which was found to be related to most other job outcomes.

In addition to the questions of what kinds of workers liked the new jobs better and in what respects, it is of interest to ask what kinds of jobs, independent of personal and occupational differences among the workers, made for greater work satisfaction with the job change. To put the question more directly: holding the worker characteristics constant and isolating the effect of the objective characteristics of the new job — duration of the job search, location in or out of Pune, re-employment in or out of the factory sector, transfer of skills and wage gains — which of these features of the job exchange were associated with the greater work satisfaction with the new job? Table 3.25 presents the OLS co-efficients for the factor scores for interpersonal relations and the job-related features of the new job regressed on each of the 'objective' characteristics in turn. In each case, all the worker characteristics have been held constant so that the effects of the job exchange features can be examined in and of themselves. Asterisks indicate those co-efficients that are statistically significant.

TABLE 3.25
OLS Regression Coefficients of Objective New Job Features
for Subjective Outcomes (Worker Characteristics Held Constant)

Change Features	Interpersonal	Job Related
Long Job Search	-0.11	0.12
Non-Pune Job Search	-0.05	0.04
Next Job in Factory	-0.15	-0.09
Used Old Skills	0.40*	0.32*
Gained Wages	-0.02	0.19*

From this table, it seems clear that only two of the features of the job exchange affected the worker's relative satisfaction with the new job. Those who were able to transfer skills from one job to another found the new job more satisfying both in terms of inter-personal relations with the management and co-workers, and in terms of job-related features, such as the chance for advancement, job security, and pleasantness of work. Second, if workers gained in wages in the transfer, then the objective characteristics of the new

job seemed superior, but not the interpersonal relations. Other features of the job exchange seem to have made little difference, once the workers' personal and old job characteristics are held constant. Of special note is the fact that whether or not the next job was in or out of the factory sector seems to have made little difference in the workers' relative ratings of the new job, once again casting doubt on the notion employed in much of the literature that these workers had a set of attitudes toward factory work in general.

Summary of Old Labor Market

1. The labor force was highly stable compared with factories in the same industry in the same region, all of India, and the United States.
2. A large proportion, about 40%, of those leaving the factory left at the company's initiative, not their own.
3. Those who left voluntarily and involuntarily differed substantially.
4. The process of selection of who quit and who stayed in the old factories seems to have been largely idiosyncratic. Only seven out of 81 variables were statistically significant predictors, and they had little to do with the objective features of the world of work. Although temporary workers did quit more frequently than those with permanent jobs, such important worker characteristics as occupation, age, seniority, skill level, and previous job history seem to have had little predictive effect in and of themselves.
5. By and large, the labor market provided jobs for those who sought them. Only the old, the sick, and the uneducated remained permanently unemployed and most of these did not try to find another job. Moreover, while relatively few workers were sure of another job before leaving the old one, the time spent in finding another job was relatively brief: half reported finding a new job immediately, and 60% within a month.
6. The principal mechanism for finding a new job was the assistance of friends and relatives, although the use of formal mechanisms such as written applications, answering advertisements, and registration with the government employment exchange had increased. Those who relied on the assistance of friends and relatives found jobs more quickly, while those who depended upon the employment exchange took longer. Few other characteristics had any influence on the length of the job search.
7. The re-employment market was largely local and urban. Three-fourths of the workers were re-employed in the Pune metropolitan area, and only 4.8% left Maharashtra. Only 7% moved to a village for re-employment.

8. In fact, very little residential migration was associated with the job move: 90% of the workers were living at the same residence before and after the move. Whether the new job turned out to be closer to or farther from the place of residence seems to have been almost random: 53.9% reported living the same distance or farther from their work, the remainder lived closer, and few variables predicted which would be which.

9. While almost all the workers who sought another job did find one, for more than half (58.4%) this meant leaving the factory sector. Movement in and out of the factory sector repeated an earlier pattern. About half (44.1%) of those employed in the old factories had come from jobs out of the factory sector. A few of the departees (15%) found jobs in agriculture, but they, like the unemployed, tended to be the old, the sick, and the uneducated. The remainder fanned out through a wide variety of jobs in the unorganized sector of the urban economy. This movement out of the factory sector seems not to have represented a lack of commitment to industrial employment: only about half of those who left the factory sector indicated that they preferred it to factory work, and two-thirds said that they would take the old job back if it were offered. In the main, the workers did not fall back into family-owned enterprises – only 12% did so; nor did they tend to go back into occupations in which they had been employed before. Most of the new occupations had little similarity to the work performed either in the old factory or before.

10. Even those going into the factory sector tended to have relatively little skill transfer as measured by the objective similarity of occupation, or the workers' own reports of the extent to which skills employed in the old job were used in the new one. Clerks tended to remain clerks but infrequently stayed within the same industry or type of company. Only the workers leaving the more modern engine factory tended to go into similar jobs the next time, although supervisors and the more highly skilled had some greater skill transfer than the others. There was surprisingly little skill transfer among workers leaving the textile mill, where it might have been expected.

11. Economic gain seems not to have been the motive for the job change for most workers, or, if it was, the workers were relatively unsuccessful in achieving it. Only 34.4% reported higher pay for the new job than for the old one. In fact, wage differences in the new jobs seem to have been a rather precise reflection of wage difference in the old factory, with a slight drop in the midpoint.

12. Of the five objective outcomes of the job change, the time it took to find a new job and whether or not it was in Pune seem to have had little to do either with the characteristics of the workers or with the other job outcomes. Remaining in the factory sector, using skills acquired in the old job, and

gaining in wages were highly correlated both with each other and with various worker characteristics, particularly education.

13. Half the workers gave a higher overall rating to the new job than to the old one; the others rated the old one about the same or better. Within this overall rating, however, there were two distinct categories, one related to characteristics of the job *per se* — job security, chance for advancement, and pleasantness of work — and the other to interpersonal relations with management, supervisors, peers, and inferiors. Most workers rated the two jobs as very similar in the inter-personal category, while they differed more sharply on the objective job characteristics.

14. As with the selectivity of who would leave and who would stay as described in the last chapter, the extent to which individual variables predicted job outcomes was relatively slight. The overall predictive effects of combinations of these variables, as measured by R^2 , were fairly high, but with all other variables held constant, the predictive effect of most individual variables was relatively low and depended upon the outcome being predicted. The one fairly consistent predictor was the worker's general level of education, which survived as an efficient determinant of most outcomes in the labor market, as it was of turnover.

Chapter IV

Applicants and Hired in the New Labor Market

This chapter turns from the five older factories examined in the 1957 survey to the 13 mainly newly established factories studied in 1965. As noted at the outset, in this short time the city of Pune and its immediate suburbs were transformed by a sudden spurt of industrialization. Pune had essentially been an administrative, cultural, and educational center for Maharashtra, with an enclaved remnant of a westernized residential area and large military complex abutting the city in what is called the cantonment. Manufacturing establishments were few, mainly small scale, and scattered throughout the city and its environs.

In the late 1950s, the Government of Maharashtra, partly in an attempt to slow the pell-mell growth of industrial concentration in Bombay, set out to establish a major industrial center just outside Pune. It provided relatively low-cost land, brought in power lines, roads, and railway spurs, and created tax incentives for factories settling in the area and strong disincentives for settlement elsewhere, particularly near Bombay. The strategies worked, and major new industrial complexes began to fill the frontage along the major roadways and railway lines in the environs of the city, particularly those on the routes between Pune and Bombay. The new establishments mostly were medium to large scale — it was these for whom the incentives made a real difference, and for whom a little distance from the large suppliers and markets was less disabling than for the small manufacturer. Many were either foreign-owned or had foreign collaboration; these had the least investment in a particular locale, and the greatest susceptibility to government control over plant location. Pune suddenly became an industrial center with a large number of relatively high-technology plants, all in their early growth stages at the same time.

The sudden spurt of industrialization in Pune in the years immediately preceding the survey year of 1965 was dramatic. During the 10 years between the 1951 and 1961 censuses, employment in manufacturing units in Pune increased by 21.2% to about 19,737 workers in all. In the four years from 1961 to 1964, the number of workers in registered factories in Pune increased by 209.6% to a new total of 61,097.¹ The increase was concentrated in heavy and

¹ Maharashtra. Directorate of Employment, *The Poona Labour Market (A Pilot Study)*, 1965: p. vi, 3.

light engineering, electrical appliances, oil engines, precision instruments, sugar machinery, chemicals and pharmaceuticals, and plastic and rubber products — with the exception of sugar machinery and chemicals, all industries represented in this sample. In the machinery manufacturing sector alone, the category into which most of the sample plants fall, the increase in employment during the four years was 175.8%. Clearly, the increase in demand for labor was sudden and substantial, and while for many of these factories the first complement of workers was in place, as of the end of 1964 the officers of the companies already established in Pune anticipated an increase of about 26% in their work forces during the next two years. And more factories were yet to come.²

This growth had an inevitable impact on the city.³ It brought in a substantial number of extraregional and international factory managers and professionals who diluted what had been a fairly homogeneous local elite. It provided a whole range of new job opportunities, particularly for highly educated young males. And it changed the center of gravity and the rhythm of the city. What had been a service center with its heart in its centralized core became an industrial city with the new economic activities dispersed on the periphery in ribbons along the major roads leading into the city. Inevitably, housing and other amenities for the workers could not keep pace with the expanding work force employed in the new industries and a twice daily stream of commuters left the old wards of the city and traveled by cycle, on foot, by bus, and by rail out to the new factory compounds. This pattern was reinforced by the desire of the workers to maintain their residences in the city, where their familial and cultural roots were, and where their children would have an opportunity to pass through the full cycle of education provided free to high-achieving students by the Deccan Education Society and the Municipality. As for the factories, they needed large numbers of skilled and/or trainable workers to run their complex machines.

It is in this context that we examine the labor market in which the 13 new sample factories found themselves. It will be recalled that the old and new samples overlapped in two cases: the most modern of the old factories, the engine factory, whose production system and labor force had the most in common with the newcomer industries; and a new machinery manufacturing section recently added to the textile mill. The other 11 were newly established industrial units all engaged in the manufacture of either machinery, in the

² *Ibid.*

³ For an analysis of changes in the city of Pune at this time, see Sashihant B. Sahant, *The City of Poona, A Study in Urban Geography*. Ph.D. Dissertation, University of Poona, 1978.

main motors and machine tools, or electrical equipment. On the whole, the 13 factories in the new sample are quite different from the old factories in level of technology, and hence in the skills needed in the work force; in the modernity of the factory setting and production system; in managerial style; and in their links to a larger industrial network elsewhere in India and abroad. The units were deliberately chosen to present the sharpest possible contrast to the old factory sample. Moreover, the new factories all shared a central demand for a particular kind of worker, the metal worker — turner, fitter, grinder, miller, borer, and so forth. Thus the samples were selected in an attempt to maximize factory competition for the same kind of skills, skills for which there had been little demand in Pune before the sudden industrialization, and to enhance the likelihood of skill scarcity.

The studies of the new factories have two components. First, the pool of workers applying for employment in the new factories and the subset of those actually hired were examined. The data for this analysis derive from questionnaires administered to all who applied for a job to any of the 13 factories in the sample during the first three months of 1965, some 1,335 in all. Of these 1,335 applicants, 266 were hired: supplemental information comparing the old and new jobs was collected from them. Second, those leaving the new factories were asked the same questions asked of those leaving the factories in the old sample. The survey of the applicant pool and the workers hired will be considered first.

To make as clear as possible the contrast between the old and new factory labor markets, the presentation of the findings in this section of the study will follow a format similar to that used in Chapter II, and frequent comparisons will be made with the data in that chapter. In particular, evidence will be presented on the personal background of the workers, their work experience, and how they went about seeking new jobs, all characteristics that were explored in the other study. These data will be used not only to dramatize the differences between the workers in the old and new job markets, but also to examine differences between subsets of applicants, such as those applying for white or blue collar jobs, or to compare those who were new to the job market with those who had had previous experience. The data will also be used to illuminate the process of selection of those hired out of the total pool of applicants, and what that pool looked like overall, with particular reference to supply and demand for workers.

Aggregate Supply and Demand

The first question, then, is whether there was any overall shortage of applicants in terms of the ratio of demand forecasts and actual hirings to the number of potential workers who applied for jobs. Clearly, the closer those ratios were to one, the less evidence there was of a general shortage of available labor. The level of forecast demand was derived⁴ from a survey of new factories in the Pune labor market area undertaken by the Employment Exchange of the Government of Maharashtra at the same time as our own survey. As part of the Employment Exchange survey, the labor officers in each factory were asked to provide information on past and projected growth in the companies' labor force, that is, the number of workers in various occupations they expected to hire in each quarter over the next year, and per year over the next five years. Our own data make it possible to indicate how many workers of various kinds actually applied for jobs in the first quarter of 1965, and how many were hired.

Table 4.1 presents for each factory the stated demand for all workers in 1964-65, transformed from a one-year to a quarterly basis by dividing the statement of annual need by four; the total number of applicants in the sample for the period from mid-January to mid-April 1965; the total number hired during that period; the ratios of stated demand to the number of applicants; and the success rate for applicants or the number hired as a percentage of all applicants.

Neither ratio is entirely satisfactory as a measure of the match between supply and demand. Forecast demand has some of the character of an abstract wish list. Its fragility is here illustrated by the ratio of applicants to demand in several of the companies. In the tungsten drill and diesel engine factories, projected demand was actually lower than the number of workers hired. At the other extreme, in the scientific electricals factory, the company told the Employment Exchange survey that it would need 40 additional workers during the quarter, but it hired only two. The second figure, the number of actual hirings, is probably an underestimate of demand, since the company still might have hired more workers if enough applicants with the proper qualifications had turned up.

In any event, no matter how unreliable the estimate of projected quarterly demand and actual hirings were as measures of real demand for an individual factory, they did in general agree ($r=0.6806$). Both, particularly the number

⁴ Through the courtesy of the Maharashtra Chamber of Commerce we were able to examine those portions of the actual questionnaires returned by the factories in our sample.

TABLE 4.1
 Size, Quarterly Demand, Supply, and Hires for All Workers
 (January-April 1965)

Factory	Number Workers	Quarterly Demand	Total Applicants	Total Hired	Applicants/ Demand	Applicants/ Hired
Textile Machinery	239	8	57	17	7.12	3.35
Oil Engines	1876	59	242	35	4.10	6.91
Tungsten Drills	231	13	117	20	9.00	5.85
Machine Tools I	634	a	43	5	—	8.60
Machine Tools II	603	73	70	9	0.95	7.78
Heavy Electricals	224	30	29	6	0.97	4.83
Electric Fans	942	46	109	26	2.37	4.19
Motor Scooters	807	125	187	57	1.50	3.28
Scientific Electricals	420	40	63	2	1.58	31.50
Insulated Wire	187	20	43	12	2.15	3.58
Diesel Engines	320	31	143	38	4.61	3.76
Air Compressors	829	61	158	30	2.59	5.27
Cables	<u>387</u>	<u>10</u>	<u>74</u>	<u>9</u>	<u>7.40</u>	<u>8.22</u>
TOTALS	7699	516	1335	266	2.59	5.02

a=No information available

hired, were reasonably good predictors of the number of applicants: $r=0.7377$ for the relation between applicants and those hired, and $r=0.5337$ between projected demand and hired. With all their drawbacks, then, using stated demand and actual hirings as estimates of real demand, it is apparent from Table 4.1 that, in all but two of the factories, the number of applicants exceeded demand, usually by a considerable margin. The average ratio of applicants to demand among the factories was 2.59. Of course, the number of applicants had to exceed the number hired, but in all factories applicants exceeded hirings by a substantial number; on the average, there were 5.02 applicants for each person hired.

Occupation-Specific Supply and Demand

While the size of the total applicant pool and its relation to total demand is of interest, it can be misleading. Effective demand is not just for a fixed number of applicants in general, but is specific to particular kinds of skills required in the manufacturing process. This was particularly true in the Pune labor market at the time of the survey, for the new factories required a considerably higher level of worker skill than the old ones. A simple indication of the quantum jump in industrial skill level accompanying the arrival of the new factories is given in Table 4.2, which indicates the ratio of skilled and semi-skilled workers to unskilled workers in the new factories compared with the old. The lower the ratio, the more skilled the work force of the factory.

TABLE 4.2

Number Unskilled per Skilled and Semi-skilled Workers

Old Factory Sample	Unskilled/Skilled and Semi-skilled
Textiles	0.64
Paper	0.94
Engine	0.47
Biscuit	1.40
Rubber	6.09
Mean Old Sample	1.91

Unskilled/Skilled and Semi-skilled

New Factory Sample

Textile Machinery	0.56
Oil Engines	0.68
Tungsten Drills	0.46
Machine Tools I	0.72
Machine Tools II	0.25
Heavy Electricals	0.80
Electric Fans	0.70
Motor Scooters	0.39
Scientific Electricals	0.10
Insulated Wire	0.96
Diesel Engines	0.50
Air Compressors	0.36
Cables	0.57
Mean New Sample	0.54

It will be seen that the average number of unskilled workers per skilled worker in the old factories was between three and four times as high as among the newer ones. The only factories in the old sample that approached the ratios in the new factory sample were the two chosen to appear in both studies, the textiles factory, now represented by its textile machinery producing wing, and the oil engine factory. Without them, the contrast would be even more vivid.

Table 4.3 provides the relevant data on the representation of various occupational classes in the applicant pool, among those hired and the proportion of applicants in each occupational category actually hired during the survey period.

The first thing apparent from this table is that workers applying for unskilled jobs were not swamping the market — they comprised only 8.2% of the applicants. In fact, they did fairly well in the job market. Unskilled applicants had the second highest success rate — 4.04 applicants for each worker hired — surpassed only by the professional, technical, and supervisory personnel. These latter groups seem to have been in the greatest demand in the job market, comprising almost a third of those hired and with only about three applicants for each person hired. However, even for this group, the applicant pool was considerably larger than the group actually hired. The group that was swamping the market was the clerks, representing one-

TABLE 4.3
Applicants and Hired by Occupational Class

Job Category	% Applicants	% Hired	Applicants/Hired
Professional, Technical, Supervisory	7.9	12.8	3.12
Clerks	25.2	17.7	7.15
Skilled, Semi-skilled	58.7	59.4	4.96
Unskilled	<u>8.2</u>	<u>10.2</u>	<u>4.04</u>
Overall	100.0	100.0	5.02

fourth of the applicants but only 17.7% of those hired. The ratio of clerk applicants to those hired was considerably higher than the general average — 7.15 applicants for each clerk hired, compared with the general average of 5.02 to one for all classes combined.

For the present discussion, however, the most interesting group is the skilled and semi-skilled workers. It has been argued that there was no apparent ready-made local supply of workers with the needed skills already working in the existing Pune factory sector. But whatever felt shortage there was, and almost every labor officer in the Employment Exchange survey reported such a shortage, applicants for skilled and semi-skilled jobs made up more than half the number of total applicants, and their success rate was about the same as the general average of applicants.

Perhaps the omnibus category of skilled and semi-skilled workers is too broad, masking shortages for very specific skills. At the time of the survey, labor officers quite frequently made public statements about extreme shortages in particular occupations. In fact, there was an agreed wage scale among them to prevent unfair raiding. The Employment Exchange survey was quite specific as to what the scarce occupational skills were.

It was reported that in the following occupations employers experienced shortages during the period January-June 1964: millers, tool cutters, grinders, tool room fitters, capstan and turret lathe operators, internal grinding machine operators, capstan setters, production inspectors, electrical foremen, shapers, horizontal and vertical borers, boiler attendants, machinists, instrument mechanics, and stenographers.⁵ With few exceptions, these were all metal working trades, and they were very poorly represented in the work forces of

⁵ *Ibid.*

the older factories. Only the oil engine factory hired a substantial number of metal workers. Nor were such workers represented very heavily in any other segment of the industrial labor force in Pune. At the time of the 1961 census, only 4,357 workers or 1.1% of the total labor force in Pune city fell within the metal working occupational category (SOC 750). Any great scarcity in the new labor market, therefore, would be expected to show up precisely in the relation between the supply and the demand for these skills. In the present context, the ratio of stated demand to hirings would be very high, and the ratio of hirings to applicants would approach one.

Included in the term 'metal worker' for enumeration purposes are all occupations falling in the SOC categories 750-759, 'Toolmakers, machinists, plumbers, welders, platers, and related workers.' The bulk of them fall in three categories: category 750, fitter-machinists, toolmakers, and machine tool setters; category 751, machine tool operators; and category 752, fitter-assemblers and machine erectors. In all, there were 3,354 such workers in the sample factories, or a total of 43.6% of the total work force of 7,699. This is a 75% increase in the number of such workers in all Pune industries as of 1961, and the factories in the sample comprise only 13 of the 77 or so new factories established since then. Many of the other new factories utilized metal workers as a central part of the production process as well. In short, in the four years before the study took place, there should already have been a precipitous increase in demand for metal workers.

An estimate can be made of the future demand for metal workers, since the Employment Exchange survey specifically asked about the particular occupations for which the companies anticipated hiring new workers in the next year. Taking just the factories included in our sample and dividing the annual estimated need for metal workers by four to give a projected quarterly demand, the factories indicated that they would require 279 more metal workers during the first quarter of 1965, or 54.0% of their projected overall demand. Our survey indicates that there were 324 applicants in all for metal worker jobs during the first quarter of 1965, or about 1.16 applicants for each unit of estimated demand. This does show a tighter fit between stated demand and number of applicants than was true for workers in general, where the ratio of applicants to demand was 2.59. It is also true that the ratio of applicants to those hired was more favorable: there were 120 metal workers hired during the period, for a ratio of 2.7 applicants for each person hired, compared with a ratio of 5.0 applicants to hired for the applicant pool in general.

What do these figures say about the relation of supply to demand for metal workers in the new job market? The data suggest that while the relation between supply and demand was somewhat closer for metal workers

than for the general pool, the anticipated severe shortage did not emerge. For one thing, the proportion of total projected demand allocated to metal workers was not very much above their proportion in the total work force, 54.0% compared with 46.3%. Second, even for metal workers, the total number of applicants was greater than the estimated demand. Third, the number hired was substantially lower than either the estimated demand or the number of applicants. However, to repeat an earlier caveat, the true relation between supply and demand, in particular whether there were real skill shortages in the market, depends upon two additional pieces of information that are not available: the percentage of the applicants rejected because of underqualification; and whether the company would have hired more applicants if they had had higher qualifications. The somewhat indirect relation between applicants and hirings can be illustrated by the experience of the Employment Exchange when it tried to discover why its relatively high registration lists in metal work occupations produced so few hirings.

Twenty-five applicants in the fitter trade were called for personal interviews and discussions to elicit the reasons for their reactions to jobs offered through the Exchange. The sample was limited to individuals who had either failed to report or declined an offer at least 10 times or more. Of the 25 candidates under discussion, only 10 reported to the Exchange. Individual interviews disclosed that six were already in employment earning daily emoluments between Rs.3.00 and Rs.5.00, and two of these were only interested in service under Government. Two others were found to be not adequately qualified, and their trade classification had to be changed. Of these two, one was already in employment drawing daily emoluments of Rs.2.70. The only candidate who was unemployed was interested in employment under Government.⁶

The applicant pool was not likely to be nearly as inflated as the Employment Exchange register, and employers reported little difficulty in getting acceptances from workers to whom jobs were offered. Nevertheless, the Employment Exchange's experience does suggest a little caution in the use of applicant figures as a direct measure of supply. At this point, all that can be said is that there appear to have been plenty of applicants for the general run of jobs in the fast-growing market, one that had already expanded more than 200% and added 40,000 new workers to industrial employment over the previous four years; and this was true even for the metal worker skills needed by all the factories, skills scantily represented in the Pune factory labor force previously.

⁶ *Ibid.*

The Geographic Domain of the Market

Where did the applicants come from? One obvious possibility is that the market expanded its geographic domain, pulling in more workers from outside the Pune area, or from outside Maharashtra. Bits of evidence for this would be that the applicant pool in the new labor market had a higher proportion of migrants than either the old factory population or the population of Pune in general, that these applicants had come to Pune more recently than the general population in Pune, and that a large proportion indicated that they had migrated in search of job opportunities. What do the data suggest in this regard?

First of all, was the proportion of migrants higher in the new market, compared both with the old factory population and with the population in Pune in general? The answer to the first question is no. In the old factory work force, 69.8% of the employees had been born outside Pune, compared with 61.8% of the applicants in the new labor market. The answer to the second question is yes. In all growing cities in India, a large proportion of the population is composed of in-migrants. Pune is no exception: at the time of the 1961 census, 50.0% of the male population — the appropriate comparison — had been born outside the city limits, up from 47.3% in 1951. The applicant pool in the present survey, however, did have a higher proportion of in-migrants; 61.8% had been born outside Pune. Data on place of birth, therefore, suggest that while migrants were more highly represented in the new factory work forces than in the old, there was no increase in the proportion of migrants among the applicant pool in the new labor market.

A migrant is usually defined by place of birth, but for the present purposes, data on migration since birth are a very indirect measure of the areal pull of the labor market and must be supplemented by data on the recency and job-specific motivations of the migration. For many migrants in the applicant pool, the move to the city was relatively ancient history. Nonetheless, the data suggest that migration was more recent for the applicant pool than for Pune in-migrants in general — 56.7% of the applicants had migrated to Pune within the three years prior to application, compared with only 24.1% of Pune city male migrants. In fact, 25.5% of the migrant applicants had come to Pune within the year prior to application. However, it should be noted that only a small proportion (4.6%) of the applicants were actually

resident outside Pune when they applied.

There is some evidence, therefore, that an unusually high proportion of migrants, and more recent migrants at that, was to be found in the applicant pool, suggesting either that the availability of new jobs had increased the migration flow, or that recent migrants were disproportionately represented among those who applied for jobs in the new factories.

If the applicant pool had slightly more migrants than the general population, they did not come from very far away. While most workers — and, for that matter, most Pune dwellers — were not born in the city, most had been born in Maharashtra; and the old factory population and pool of applicants differed from the general population of Pune in the same respect. Of the old factory population, 26.1% were born outside Maharashtra, while 21.7% of the applicant pool was non-Maharashtrian. These figures should be compared with 11.0% of the urban dwellers in the Pune district in the 1961 census who were born outside Maharashtra. Hence both the old factory population and the applicant pool samples had a higher proportion of in-migrants from outside Maharashtra by place of birth than the Pune population in general, but the proportion of non-Maharashtrian migrants in the applicant pool was lower than in the old factory population. Data on the mother tongue of the workers and the applicants give the same picture of relative stability in the labor markets; 21.9% of the old factory work force and 23.3% of the applicants indicated that a language other than Marathi was their mother tongue.

Where did the small minority of workers who migrated from outside Maharashtra come from? Table 4.4 answers this question in two different ways. The first column indicates the last state of residence, omitting Maharashtra, for all migrants regardless of place of birth. The second column indicates the state of residence of workers whose address at the time of application was other than Maharashtra.

It can be seen that about two-thirds (66.9%) of the non-Maharashtra migrants came from the four southern states of Andhra Pradesh, Karnataka, Kerala, and Tamil Nadu. This is a somewhat greater concentration of migrants from the south than was found in the Pune population in general, where 56.6% of the in-migrants came from the southern states. Most of the migrants from the south had already migrated at the time of application: only 40.0% of those with non-Maharashtrian addresses at the time of application came from the south. While the southerners comprised a substantial proportion of the non-Maharashtrian migrants, it should not be concluded that they made up a substantial part of the applicant pool. The southern migrants comprised only 6.7% of all applicants, and only one percent were actually living in the south at the time of application.

TABLE 4.4
Number of Non-Maharashtrian Applicants by Immediate Past Residence and by Residence at Time of Application

State	Last Residence of Migrants	Residence at Time of Application
Andhra Pradesh	11	0
Bihar	0	2
Gujarat	8	3
Karnataka	39	10
Kerala	28	1
Madhya Pradesh	5	8
Orissa	2	1
Panjab	13	0
Rajasthan	3	0
Tamil Nadu	11	3
Uttar Pradesh	8	4
West Bengal	1	0
Delhi	3	2
Pakistan	<u>1</u>	<u>1</u>
TOTAL	133	35

So far the domain for recruitment has been discussed in terms of the number and spread of migrants in the applicant pool. However, such data are still one step removed from the recruitment process. The key question is: how many and what kinds of workers migrated specifically in search of a job? The other migrants wound up in the applicant pool, but came to Pune for other reasons. Migrants who reported coming to Pune specifically in search of a job comprised a little less than half (43.2%) of the entire pool. This was a substantial flow of migrants who come to Pune specifically in search of a job.

Something can be learned about the nature of this job migration by examining who those migrants were and how they compared with the members of the applicant pool who did not report migrating as part of the job search. What kind of jobs did they apply for? In particular, were they a source of applicants for the skilled positions the factories were seeking to fill? Table 4.5 presents the data necessary for this comparison. So that variables relating to past work experience can be included in the analysis, the base for the

comparison of job migrants and others has been confined to those who had previous employment, 968 applicants in all. In the earlier analyses, the first column indicates the one-way differences, the proportion of workers with each attribute who migrated for a job, taking one variable at a time. The logit and OLS columns present estimated coefficients from regression analyses measuring the effect of each variable with all other variables held constant. Single and double asterisks indicate that the differences are significant at the .05 and .01 levels of significance. Some variables that either overlap significantly with other variables — for instance, whether the worker was seeking a specific job or a job in general — or showed little or no predictive power throughout the analysis of applicants are not included in the regression analyses, although they appear in the univariate column.

Aside from the somewhat lower proportion of Brahmans, a difference disappearing in the regression analyses, and a slightly higher age for job migrants in the one-way analysis, the principal distinguishing characteristics of job migrants were the substantial rural base of many of them, and the way they went about the job search. 43.8% of the job migrants were village-born, compared with only 22.2% of the other applicants; 42.3% at some time had worked on a farm, compared with 24.8% of the other applicants; 55.2% had fathers who had worked on a farm, compared with 36.6% of the other applicants. Although the job migrants had a rural background, however, this is not to say that the new factories were recruiting directly from the farm. Relatively few of the job migrants, only 6.8%, had been agriculturists in the last previous employment, not much more than the 5.0% of all applicants who reported agriculture as the last previous occupation.

The job migrants also seem to have been a little less focused in the job search. A smaller proportion (30.9%) were answering advertisements, they were more likely to apply for a job in general than to specify a particular job, and they were more likely to use the help of kin and friends in seeking the job.

The regression analyses reinforce the impression that the job migrants were more rural in origin and relatively more diffuse in application procedure. None of these attributes, however, implies that the job migrants were a prime source of the extra reservoir of skills the labor market was seeking. Nor did they apply disproportionately for skilled jobs; the profile of occupations they applied for was not significantly different from that of the general applicant pool.

To summarize, then, the applicant pool in the new job market did seem to have an overrepresentation of migrants compared with the general Pune population, but not to a greater degree than the old factory sample. Most of

TABLE 4.5
Migration for Jobs Among Non-Freshers

	Total Number	% Migrated for Job	LOGIT	OLS
All Non-Fresher Applicants	968	33.5		
Brahman	250	28.0*	-0.26	-0.05
Harijan	74	39.2	0.37	0.07
Education				
No Education	32	50.0		
Up to 10th Standard	449	31.8		
Matric and Above	487	33.9		
Had Technical Education	316	37.0	0.30	0.06
Pune Born	268	0.0**		
Single	647	31.4	0.04	0.001
Age (Mean Difference)	2684	+1.09*	0.13*	0.03*
Marathi Mother Tongue	741	32.0	0.40*	-0.08*
Knows English	726	32.6		
Village Born	285	49.8**		
Worked on a Farm	297	46.1**	0.90**	0.18**
Father Worked on a Farm	415	43.1*		
Father Worked in a Factory	159	30.8	0.06	-0.01
First Job	472	27.8**	-0.57**	0.11**
Heard of Specific Job Opening	722	31.2*	0.24	-0.05
Heard of General Job Opening	198	43.4**		
Answered Ad	384	26.0**	-0.69**	-0.14**
Used Employment Exchange	433	33.5	0.24	0.02

TABLE 4.5 (cont.)

	Total Number	% Migrated for Job	LOGIT	OLS
Friends and Relatives Helped	388	36.9	-0.001	0.001
Applied Elsewhere	355	36.3		
Hired	202	42.6**		
SOC Applied for				
Technical & Administrative	79	38.0	0.18	0.03
Clerk	232	28.4	-0.15	-0.03
Skilled and Semi-skilled	562	34.7		
Unskilled	95	34.7	0.02	0.001
Last Employer's SIC				
Primary-Agriculture, Mining	53	39.6		
Secondary-Manufacturing	572	33.9		
Tertiary-Service	343	31.8		
Seniority Last Job Over 6 Months	681	32.3	0.14	0.03
SOC Last Job				
Technical & Administrative	114	36.0	0.13	0.02
Clerk	219	29.2	-0.15	-0.03
Skilled, Semi-skilled	505	34.7		
Unskilled	76	28.9	-0.61*	-0.12*
Agricultural	54	40.7	0.22	0.05
SOC Same or Similar	243	33.1		
Wages Increased	105	39.0		
Last Employer's SIC was Manufacturing	298	33.2	-0.02	-0.07
SIC Same or Similar	571	33.8		
R ²				0.09

the migrants, however, were from other places in Maharashtra and had come to Pune well before applying for the job in the new factory, although in general they came to Pune more recently than the migrants in the population of Pune at large. A minority, but still a substantial proportion, reported that they had migrated to Pune in search of a job, but the job migrant group was distinguished from others mainly by rural origins, and did not have a disproportionate component of skilled or semi-skilled workers. To return to the original point of this section, at best there is only weak evidence to support the notion that expansion of the geographic domain of recruitment was a primary facilitator for a high-demand labor market. It would be safe to say that even in the face of a major expansion in demand, the market remained fairly localized.

The Growth of an Educated Manpower Supply

If the appearance of a substantial applicant pool did not result from a radical expansion in the recruitment zone, where did it come from? Perhaps some clue may be found by contrasting other characteristics of that pool with those of other samples in the studies. Certain changes in the Pune population in general might also help explain where the substantial number of applicants came from. Table 4.6 presents data on the social characteristics of the sample applicants and the old factory work force.

It is immediately apparent that the applicant pool in the new labor market was markedly different from the workers in the old labor market. The applicant pool contained a considerably higher proportion of young, single males, a higher proportion of Brahmans, and a much lower proportion of the Backward Castes. The proportion of females remained about the same, a rather insignificant level. The most dramatic change was a substantial upgrading in the educational qualifications of the workers. Workers with no education, comprising almost a third of the old factory sample, represented only a very small segment of the new labor market, 2.5% of the applicants and 0.9% of workers leaving the new factories. Conversely, the number of secondary school graduates increased from less than 10% in the old factories to more than half in each of the new factories. In fact, as many as 18.9% of the applicants in the new labor market had received some college-level education, whereas only 2.7% of the old factory work force had received this much education. Equally striking is the appearance of a substantial group (35.7%) of applicants in the new market who had had some formal technical education.

TABLE 4.6
Comparison of Social and Background Characteristics

Variable	% Applicants	New Factories % Leavers	Old Factories % Leavers
Education			
No Education	2.5	0.9	32.1
Up to 10th Standard	43.7	48.9	58.7
Matric and Above	53.8	50.1	9.2
Had Technical Education	35.7	37.8	2.9
Caste			
Brahman	35.1	33.2	15.0
Maratha	26.1	26.3	35.2
Intermediate	18.2	17.3	20.9
Backward	7.5	2.5	11.2
Other Religion and Region	23.1	20.7	17.5
Age			
Mean	23.5	24.5	
Median	25.0	25.0	32.4
Never Married	73.3	65.7	15.8
Female	3.9	4.6	3.4
Mother Tongue (Not Marathi)	23.3	20.5	21.9
English	80.0	—	25.1
Birthplace - Pune	38.6	50.7	30.2

Only 2.9% of the workers in the old factories had had any technical education.

The major increase in the general and technical educational level of the workers in the new labor market was made possible by a great expansion in

the educational facilities and enrollments in Pune as a whole and, in particular, by the increased flow of technically trained students graduating from the engineering schools, polytechnics, craftsman training institutes, and technically oriented secondary schools. The increase in institutions and graduates between 1951-52 and 1962-63⁷ is given in Table 4.7

TABLE 4.7
Institutions and Enrollees in Pune, 1951-52 and 1962-63

Institutions	1951-52	1962-63	Increase
Primary			
Schools	1,414	1,998	41.3
Students	196,715	347,602	76.7
Secondary			
Schools	76	187	146.0
Students	27,421	79,176	188.7
Higher			
Colleges	26	43	65.4
Students	8,884	15,880	78.7

An evident surge in general education, particularly at the secondary level, preceded and accompanied the establishment of the new factories. Between 1961 and 1964, there were 28,163 awards indicating the successful completion of secondary school, and 12,322 Bachelor degrees from the area colleges. The output of technical training institutions during the period was also impressive. Between 1961 and 1964, 1,196 Bachelor of Engineering degrees, 741 Diplomas in Engineering, 2,305 Craftsman Certificates, and 441 Secondary School Completion Certificates from technically oriented secondary schools were awarded in Pune.⁸

It seems likely, then, that it was the emergence of this highly educated, especially technically educated, manpower pool that produced the surprisingly strong applicant pool. Without it, it would be hard to imagine the creation

⁷ *Ibid.*

⁸ *Ibid.*

of an applicant pool at all capable of manning the new factory jobs. While educational enrollments were expanding throughout India, indeed throughout most of the world, Pune, as a traditional center of education, had both a higher initial base and a greater rate of expansion than most other cities, and the decade 1951-61 was the beginning of a major educational surge. It was precisely the expansion of this pool of educated manpower that made possible the rapid establishment almost *de novo* of a major industrial base in Pune.

Applicants Without Job Experience

Another indication of the role of education in providing the substantial applicant pool for new factory employment is the high proportion of highly educated applicants who had had no previous employment experience (freshers). More than one-fourth (27.5%) of those applying for jobs in the new factories had had no previous job experience. How did these applicants for first-time employment compare with the rest of the applicant pool? It will be recalled from Table 4.6, that, in comparing the social characteristics of the total applicant pool in the new job market with those of the workers in the old factory sample, there had been a great increase in the social quality of the work force, in particular a shift toward the higher castes, the more educated — both generally and technically — and those who spoke English. In addition, workers in the new market were younger and more likely still to be single. These are the same qualities (Table 4.8) that distinguished the freshers from those who had already had some employment experience: there were more Brahmans, they were better educated both generally and technically, and they were more likely to know English, to be younger, and still to be single. The freshers were also distinguished from other applicants by the way they went about seeking jobs. Inexperienced applicants tended to register with the Employment Exchange more frequently than the general pool of applicants, they applied for a general rather than a specific job, and they were less likely to be able to make contact through the informal network of friends and relatives.

The key asset that the freshers brought to the market, however, was education. What the factories were doing was attracting the highest-achieving segment of the students graduating from the local⁹ — a higher percentage of

⁹ *Ibid.* A higher percentage of the freshers were born in Pune, and fewer of them migrated for a job.

TABLE 4.8
Comparison of Freshers with Non-Freshers

	Number	% Fresher	LOGIT	OLS
Freshers	367	27.5		
Brahman	335	25.4	-0.42*	-0.00*
Harijan	100	26.0	0.22	-0.03
Education		**	0.58**	0.10**
No Education	34	5.9		
Up to 10th Standard	583	23.0		
Matric and Above	718	32.2		
Had Technical Education	476	33.3**	0.40**	0.06**
Pune Born	391	31.5*	0.05	0.01
Single	978	33.8**	0.87**	0.14**
Age (Mean Difference)			-0.65**	-0.06**
Marathi Mother Tongue	1024	27.6	0.07	0.01
Knows English	1068	32.0		
Village Born	403	29.3		
Worked on a Farm	400	25.8		
Father Worked on a Farm	558	25.6		
Father Worked in a Factory	219	27.4	-0.18*	-0.02
Migrated for Job	408	20.6**	-0.48**	-0.09**
Heard of Specific Job Opening	982	26.5	-0.33*	-0.06*
Heard of General Job Opening	285	30.5		
Answered Ad	510	24.7	0.59**	-0.11**
Used Employment Exchange	628	31.1**	0.04	0.01
Friends and Relatives Helped	528	26.5	-0.21	-0.04

TABLE 4.8 (cont.)

	Number	% Fresher	LOGIT	OLS
Applied Elsewhere	467	24.0*		
Hired	266	24.1		
SOC Applied for				
Professional and Technical	106	25.5	-0.23	-0.06
Clerk	336	31.0	0.36	0.06
Skilled and Semi-skilled	784	28.3		
Unskilled	109	12.8	-0.91**	-0.12**
R ²				0.13

the freshers were born in Pune, and fewer of them migrated for a job — secondary schools, some with and some without technical education. It was these fresh applicants to the labor market who were routed through the Employment Exchange. Two comments in the Employment Exchange survey dramatize the relation of supply and demand for freshers with different levels of general education, technical education, and work experience, and the differential role of the exchange in the hiring process for such applicants.

It is of interest to note that the approximate period of waiting on the Live Register of the Exchange before a candidate finds employment through the Exchange for those below the matriculate level without any technical training or experience is about 2 to 3 years. Matriculates of a similar type wait about 2 years, while graduates wait for about one year.¹⁰

On the other hand, technically qualified personnel whether Graduates, Diploma holders or Craftsmen should have little or no waiting time. In fact, with a modicum of experience, they are not merely in employment, but pick and choose their way up without any help.¹¹

What kinds of jobs were these workers applying for, and who among them were hired? Were freshers any less likely to be hired than workers with job experience? Tables 4.9 and 4.10 answer these questions. Table 4.9 indicates the number and percentage of applicants, and Table 4.10 the number and proportion of those hired, for each of the occupational classes among freshers and nonfreshers.

¹⁰ *Ibid.*

¹¹ *Ibid.*

TABLE 4.9
Occupation Applied for by Freshers and Non-Freshers

Occupational Class	Fresher		Non-Fresher	
	Number	%	Number	%
Professional and Technical	27	7.4	79	8.2
Clerks	104	28.3	232	24.0
Skilled and Semi-skilled	222	60.5	562	58.1
Unskilled	14	3.8	95	9.8

TABLE 4.10
Proportion of Applicants Hired by Occupational Class
For Freshers and Non-Freshers

Occupational Class	Fresher		Non-Fresher	
	Number	%	Number	%
Professional and Technical	5	18.5	29	36.7
Clerks	13	12.5	34	14.7
Skilled and Semi-skilled	44	19.8	114	20.3
Unskilled	2	14.3	25	26.3

It is clear that the only real difference between experienced and inexperienced applicants in the occupations they applied for was that fewer fresher applicants sought unskilled jobs. Conversely, almost all those seeking unskilled jobs brought some work experience to the market. Presumably, the high educational level of the freshers made them both unfit and unwilling to apply for jobs at that level. Otherwise, the freshers applied for the various classes of occupations in about the same proportion as the non-freshers. To put it the other way around, the applicant pool for all occupational classes was supplemented by a proportionate flow of fresh recruits to the labor force, a rather surprising finding.

It is the relative success of fresher and non-fresher applicants in the other occupational classes that is interesting. (Table 4.10) Except for those applying for technical and administrative jobs – and even here the difference is not statistically significant – freshers seem to have had about the same chance of being hired as non-freshers. The advantage of experience that the

Employment Exchange survey spoke of seems not to have operated very strongly, even within the skilled and semi-skilled job market.

Since the freshers could not cite job experience to improve their chances of employment, what did enhance their chances of being hired? Table 4.11 indicates the variables that distinguished the fresher applicants who found employment from those who did not.

TABLE 4.11
Hired and Not Hired Among the Freshers

	% Hired	LOGIT	OLS
All Hired Freshers	17.4		
Brahman	17.6	0.01	0.001
Harijan	11.5	-0.02	-0.001
Education		1.11**	0.15**
No Education	0.0		
Up to 10th Standard	11.9		
Matric and Above	20.4		
Had Technical Education	21.9	0.31	0.05
Pune Born	17.9	0.04	0.004
Single	17.8	0.11	0.03
Age (Mean Difference)	-0.19	-0.12	-0.01
Marathi Mother Tongue	15.5	-0.57	-0.08
Knows English	18.1		
Village Born	13.6		
Worked on Farm	12.6		
Father Worked on Farm	11.9*		
Father Worked in Factory	18.3	0.17	0.02
Migrated for Job	19.0	0.07	0.01
Heard of Specific Job Opening	16.2	-0.02	-0.004

TABLE 4.11 (cont.)

	% Hired	LOGIT	OLS
Heard of General Job Opening	26.4*		
Answered Ad	7.1**	-1.63**	-0.19**
Used Employment Exchange	17.9	-0.12	0.02
Friends and Relatives Helped	21.4	0.22	0.03
Applied Elsewhere	27.7**		
SOC Applied for			
Technical and Administrative	18.5	0.67	0.09
Clerk	12.5	-0.08	-0.001
Skilled and Semi-skilled	19.8		
Unskilled	14.3	-0.21	-0.01
R ²			0.09

The tabular analysis shows that a number of variables marked off the successful from the unsuccessful applicant. In part, a successful job application for freshers seems to have depended upon how they went about the job search. Those who filed only one application, whose application was not an answer to a particular advertised opening, and in fact who applied for a job in general rather than a specific job seem to have been more likely to be hired. In the regression analysis, only the advertisement seems to have been important. The primary predictor, however, in both types of analysis was education, including technical education: the more education the fresher applicant had, the more likely he was to be hired. None of the other social characteristics seems to have made a difference, and, of course, freshers had no job experience to recommend them.

Experienced Applicants

While the role of the highly educated freshers in the new job market is of great interest, most of the applicants (72.5%) had had previous jobs or were actually working for another employer at the time of application. In fact, comparing the previous experience of the workers in the old factories with

that of the workers in the applicant pool, a much higher proportion of the latter brought work experience to the job market — only 62.6% of the old factory work force were non-freshers before employment in those factories.

What kind of employment experience did the non-fresher applicant pool offer to potential employers, and how did their employment experience relate to the jobs they were applying for? Table 4.12 and Table 4.13 present the distributions, by industrial group and by occupation, of the last or current jobs of non-fresher applicants. The classification follows the Standard Industrial and Occupational Classifications. It will be recalled that these two distributions, although overlapping, relate to two different aspects of employment: the industry in which the workers were employed, and the occupations carried out for those employers. For instance, clerks are distributed throughout the industrial classification according to the economic category of the employer, whereas they appear as a discrete unit in the occupational classification no matter what kind of enterprise they worked in. Similarly, those working in manufacturing in the industrial classification include more than craftsmen and machine operators, while some machine operators may be in non-manufacturing enterprises.

It is clear that direct recruitment from agriculture to the new factory labor market was relatively low, comprising only 5.4% of the applicants. However, a surprisingly high proportion (30.7%) of the workers had at one time worked on a farm. The equivalent figure for the old factory work force was only eight out of 821 workers, or less than one percent. The proportion of the applicants born in a village (29.4%) was about the same as the proportion who had worked on a farm. Taking the matter back a generation, 42.9% of the applicant pool had fathers who had worked on a farm. Thus many in the applicant pool had rural origins, but for most this connection had lapsed some time ago. Only 1.9% had worked on a farm within the year immediately preceding the application, and only 1.0% were working on a farm at the time of the application. Thus there is evidence of a past rural-to-urban migration among a fairly sizeable number of applicants, but the agricultural work force was not an immediate source of recruitment for the new factories.

The prime source of recruits was other manufacturing concerns: 59.1% of the applicants were last or currently employed in the factories. About half the applicants were actual craftsmen or other production workers. Except for the service industries, which contributed 23.1% of the applicant pool — only 5.9% of those were actually carrying out a service job, as opposed to, say, a clerical job in a service firm — each of the other industrial groups provided only a small proportion of the applicants. The manufacturing and service industries together accounted for 82.2% of the applicants.

TABLE 4.12
Industrial Classification of Last Employment

Industrial Class	Number	Percentage
Agriculture, Hunting, Fishing	53	5.4
Mining and Quarrying	4	0.4
Manufacturing	572	59.1
Construction	29	3.0
Electric, Gas, Water	7	0.7
Commerce	63	6.5
Transport, Storage, Communication	16	1.7
Services	<u>224</u>	<u>23.1</u>
TOTAL	968	100.0

TABLE 4.13
Occupational Classification of Last Employment

Occupational Class	Number	Percentage
Professional, Technical	105	10.8
Administrative, Executive, Management	7	0.7
Clerical	232	24.0
Sales	32	3.5
Farmers, Fisherman, Hunters, Loggers	54	5.6
Quarrying	4	0.4
Transport and Communication	11	1.1
Craftsmen, Production Workers	487	50.3
Service, Sport and Recreation	<u>36</u>	<u>3.7</u>
TOTAL	968	100.0

How did the industrial and occupational profile of the applicants compare with that of the male working population in Pune? Were those offering themselves for employment in the new factories a cross-section of the general male work force, or was there some occupational and educational selectivity

as to who would apply? Tables 3.14 and 3.15 compare the SIC and SOC classifications of the non-freshers in the applicant pool with those of the males in the Pune metropolitan area at the time of the 1961 survey.

TABLE 4.14
Industry of Employment of Pune Males (1961)
and Non-Fresher Applicants

Industry	Pune Males		Non-Freshers	
	Number	%	Number	%
Agriculture	3,207	1.7	53	5.9
Mines and Quarries	2,137	1.1	4	0.4
Manufacturing	52,982	27.8	572	59.1
Construction	7,965	4.2	29	6.0
Trade and Commerce	30,585	16.0	63	6.5
Transport, Communication	20,777	10.9	16	1.7
Service	<u>72,976</u>	<u>38.3</u>	<u>224</u>	<u>23.1</u>
TOTAL	190,629	100.0	968	100.0

TABLE 4.15
Occupations of Pune Males (1961)
and Non-Fresher Applicants

Occupation	Pune Males		Non-Freshers	
	Number	%	Number	%
Professional and Technical	16,132	6.8	105	10.8
Administrative	12,920	5.4	7	0.7
Clerical	50,641	21.4	232	24.0
Sales	28,479	12.0	32	3.3
Agriculture, Fishermen	4,495	1.9	54	5.6
Quarrying	287	0.1	4	0.4
Transport and Communication	12,858	5.4	11	1.1
Craftsman, Production	84,385	35.6	487	50.3
Service, Sport	26,896	11.3	36	3.7

The experienced applicants can be seen to be rather unrepresentative of the Pune male work force. The applicants were drawn disproportionately from the manufacturing industries, and from among the craftsmen and production workers more specifically. There was an under-representation of workers drawn from the service industries, trade, and transport, and appreciably fewer applicants engaged in administrative, sales, transport, and service occupations. However, while there are some disproportions in both tables, particularly in the higher representation of the manufacturing industries and craft occupations, the profiles are fairly similar in the relative proportion of workers in each industrial and occupational class. In short, applicants were drawn to employment in the new factories from all the industrial and occupational groups in Pune, although those already engaged in manufacturing industries and occupations were more likely to apply than others.

Occupational Inheritance

These studies have been concerned throughout with the extent to which there was skill specificity in the Pune labor market, that is, the extent to which skills held in one job carried over into another. In this section, that question will be addressed in several different ways. First, stepping back a generation, we ask how much occupational inheritance there was among the members of the experienced applicant pool: to what extent were the workers engaged in the same occupations as their fathers? Second, to what extent did the experienced applicants seek re-employment in the same occupations they were engaged in or had just left at the time of application?

The answer to the first of these questions is to be found in Table 4.16, a cross-tabulation of the non-fresher applicants by own and father's occupation. The administrative workers have been combined with the professional and technical workers since this distinction is ambiguous in the factory. The rows represent the number of applicants whose father's occupation was the one indicated in the left-hand stub; the columns indicate those whose own last occupation was the one indicated in the heading. The diagonal indicates occupational inheritance, whether the father's and the applicant's occupations were the same. In a rough fashion, numbers below the diagonal indicate inter-generational upward mobility, and numbers above indicate downward mobility.

Looking first at the marginals which give the overall distribution of occupations in the two generations, it is clear that there had been a substantial

TABLE 4.16
 Comparison of Father's SOC with SOC
 of Last Job Among Non-Fresher

Father's Occupation	Applicant's Last Occupation	Professional and Administrative	Clerk	Skilled and Semi-skilled	Unskilled	Agriculture	Total
Professional and Administrative		37	40	42	5	2	126
Clerk		16	31	36	1	0	84
Skilled and Semi-skilled		43	117	280	29	12	481
Unskilled		1	2	22	9	3	37
Agriculture		<u>17</u>	<u>29</u>	<u>125</u>	<u>32</u>	<u>37</u>	<u>240</u>
TOTAL		114	219	505	76	54	968

increase between generations in the proportion of clerks and other white collar workers. At the same time, there had been a major decline in the proportion of agriculturalists. In general, there seems to have been a shifting upward of the overall occupational distribution, along with the same upward mobility on the part of the individual worker. There were 170 applicants who experienced downward mobility between the generations, compared with 404 who were upwardly mobile, a ratio of almost 2.5 to one in favor of upward mobility. Less than half (40.7%) of the workers were on the diagonal — that is, holding the same occupations as their fathers — and most (71.1%) of the cases of occupational inheritance occurred in the skilled and semi-skilled category. This was also the category into which the sons of those in other occupational groups most frequently transferred. There was a tendency for the blue and white collar classes to remain within those boundaries across generations; sons of white collar workers tended to become white collar workers themselves, while few of the sons of blue collar, particularly unskilled workers, crossed the divide. Oddly enough, however, the sons of agriculturists did in fact spread throughout the occupational hierarchy, although they were tilted slightly toward the lower end of the scale. The predominant occupation, however, in terms of both occupational inheritance and the occupational class into which workers moved across generations, was the skilled and semi-skilled worker category.

Current Generation Occupational Specificity

How does this picture of relatively modest occupational specificity between generations compare with the occupational carryover from one job to the other in the current generation? Did the applicants tend to apply for the same kind of work they had been performing in the previous job? It will be recalled from the earlier analysis that the occupational specificity of job transfers as workers left the old factories was quite low. Most of the workers leaving the old factories changed not only employers but also occupations. In contrast, the new labor market was much more occupation-specific: the match between the applicant's last job and the job he was applying for was closer than the match between father's and son's occupations.

Table 4.17 presents a cross-tabulation of the occupation the worker performed in the last job and the job applied for. Since there are no agricultural jobs in the factories, those whose last job was in agriculture are omitted from the tabulation. Before skipping over those last employed in agriculture,

TABLE 4.17
 Occupation of Last Job by Occupation of Job Applied for
 by Non-Freshers Omitting Agriculturalists

SOC Last Job	SOC Applied for	Professional and Administrative	Clerk	Skilled and Semi-skilled	Unskilled	Total
Professional and Administrative		64	21	28	1	114
Clerk		5	185	27	2	219
Skilled and Semi-skilled		9	23	444	29	505
Unskilled		<u>0</u>	<u>1</u>	<u>31</u>	<u>44</u>	<u>76</u>
TOTAL		78	230	530	76	914

however, it is of interest to note what kinds of jobs they did apply for. An unusually high proportion applied for unskilled jobs, 35.2% compared with 8.2% of all applicants, and only two applied for clerical jobs, compared with 336 or 25.2% of all applicants. The bulk of them (59.2%), however, applied for skilled or semiskilled jobs, about the same proportion as among the rest of the applicants.

A glance at the diagonal of Table 4.17 shows the much higher degree of occupational specificity; 73.3% of the non-fresher applicants were applying for the same kind of job they had just held. Even for those who did change jobs, upward and downward mobility were almost equally likely: the downward moves (108) exceeded the upward moves (69), but not by much. Those moves that did occur tended to be confined within the broad occupational classes to an even greater extent than in the inter-generational comparison.

Market Stratification by Jobs Applied for

Our analysis of occupational specificity can be deepened by asking to what extent did the applicants for different jobs differ over and above their previous job experience. Table 4.18 presents a comparison of personal characteristics, job application strategies, and work experience in the various occupational groups of non-fresher applicants. The rows contain the jobs applied for by category of workers. For example, row 2 indicates that: 18.0% of the Brahmans applied for technical and administrative jobs, 44.0% for clerical jobs, 35.2% for skilled and semi-skilled jobs, and 2.4% for unskilled jobs. There were 250 Brahmans among the non-freshers, and they comprised 25.8% of all non-freshers. The final column presents the χ^2 measuring the statistical significance of differences among the job classes; as usual, one asterisk indicates that the difference is significant at the .05 level and two asterisks at the .01 level. Over- or under-representation within individual cells can be detected by comparing the percentage in the cell with the appropriate figure at the column head, representing the distribution of all applicants among the job classes; the figures indicating an undue proportion of Brahmans in the clerical class would be 44.0% and 24.0%. In the discussion that follows, the same data will also be presented in a slightly different fashion – for instance, the proportion of professional and technical workers who were Brahmans, or the proportion of unskilled workers who had had no education.

Do the data in Table 4.18 indicate that the different applicant pools

represented a distinct stratification of the job market? How different were the people applying for each kind of job. Looking at the asterisks in the final column, it is clear that out of 30 applicant characteristics, the job class pools differed significantly on 24. Clearly, applicants did differ considerably by the type of job they were applying for.

Tables 4.19 through 4.21 present three types of paired comparisons, and include both tabular and regression analyses, which probe into where the differences between rows occur.

In Table 4.19, the four occupational classes have been combined into two broad groupings: white collar, comprising the technical and administrative workers and the clerks; and blue collar, combining the skilled, semi-skilled, and unskilled. Table 4.20 contrasts the technical and administrative workers with the clerks within the white collar class, and Table 4.21 the skilled and semi-skilled workers with the unskilled ones within the blue collar class.

In the simple cross-tabulations, as might be expected, the white and blue collar classes were quite different; there was a significant difference between the two groups of applicants on 18 out of the 26 variables. White collar workers were more likely to be Brahmans; in fact, half (50.2%) of the white collar workers were Brahmans, compared with only 14.3% of the blue collar workers. There were almost no Harijans among the white collar workers, six out of 311, while 10.3% of the blue collar workers were Harijans. Almost all (99.4%) of the white collar workers spoke English, but only about two-thirds (63.5%) of the blue collar workers. The white collar workers had more general education, and 96.8% were matriculates or higher, while only 28.6% of the blue collar workers had gone that far in school; the equivalent figures for technical education were 40.5% and 28.3%. The white collar workers were a little older, and fewer of them were village-born or had worked on a farm, although they were more likely to have been migrants. In short, white collar workers represented a higher social status group.

In addition to differences in social standing, the white collar workers tended more to focus the job search, seeking a specific job rather than a job in general, and to use the formal application media such as responses to advertisements rather than seeking the help of friends and relatives. They were much less likely than the blue collar workers to have already been employed in a manufacturing concern; in fact, 53.4% of the white collar workers were employed in the tertiary sector before applying for a job in one of the new factories. Of the applicants for white collar jobs, very few (only three or 0.2%) were employed in agriculture; most agriculturists (94.4%) applied for blue collar jobs. Some of these variables lose their discriminating power in the

TABLE 4.18
Job Class Applied for: Non-Fresher Applicants

	Professional and Technical	Clerks	Skilled and Semi-skilled	Unskilled	Number Non-freshers	Overall Percent	χ^2 or t
All Non-Fresher Applicants	8.2	24.0	58.1	9.8	968		
Brahman	18.0	44.4	35.2	2.4	250	25.8	147.90**
Harijan	0.0	8.1	77.0	14.9	74	7.6	22.00**
Education							462.40**
None	0.0	0.0	50.0	50.0	32	3.3	
Up to 10th Standard	0.2	2.0	80.8	16.9	449	46.4	
Matric and Above	16.0	45.8	37.6	0.6	487	50.3	
Had Technical Education	19.9	20.3	58.2	1.6	316	32.6	114.81**
Pune Born	3.0	16.4	66.8	13.8	268	27.7	31.86**
Single	8.3	25.3	58.3	8.0	647	66.8	7.93*
Age (Mean)	27.9	28.5	26.2	28.2	968	26.8	10.40**F
Marathi Mother Tongue	7.6	24.6	56.5	11.3	741	76.5	10.58*
Knows English	10.7	31.8	55.1	2.3	726	75.0	268.03*
Village Born	4.6	20.0	60.4	15.1	285	29.4	20.88**
Worked on Farm	4.0	11.8	65.0	19.2	297	30.7	77.38**

Father Worked on Farm	5.8	16.9	62.7
Father Worked in Factory	5.7	20.8	64.8
First Job	9.1	25.0	56.4
Migrated for Job	9.3	20.4	60.2
Applied for Specific Job	8.7	28.4	57.2
Applied for General Job	6.1	12.1	59.1
Answered Ad	7.0	45.8	46.9
Used Employment Exchange	6.7	23.3	58.2
Friends and Relatives Helped	7.7	12.4	62.1
Applied Elsewhere	10.1	23.9	58.0
Hired	14.4	16.8	56.4
Last Occupational Class			
Clerk	2.3	84.5	12.3
Supervisor	56.1	18.4	24.6
Production & Maintenance	1.5	4.1	81.8
Agriculture	1.9	3.7	59.3
Last Employer's SIC			
Primary-Agriculture, Mining	3.8	7.5	52.8
Secondary-Manufacturing	7.9	16.4	69.8
Tertiary-Service	9.3	39.1	39.4

14.7	415	42.9	40.61**
8.8	159	16.4	3.96
9.5	472	48.8	1.96
10.2	324	33.5	3.80
5.7	722	74.6	74.20**
22.7	198	20.5	58.26**
0.3	384	39.7	200.88**
11.8	433	44.7	5.27
17.8	388	41.0	80.22**
7.9	355	36.7	4.81
12.4	202	20.9	19.25**
			1029.21**
0.9	219	22.6	
0.9	114	11.8	
12.6	581	60.0	
35.2	54	5.6	
			135.81**
35.8	54	5.5	
5.9	572	59.1	
12.2	343	35.4	

TABLE 4.18 (cont.)

	Professional and Technical	Clerks	Skilled and Semi-skilled	Unskilled	Number Non-freshers	Overall Percent	χ^2 or t
Seniority Last Job Under 6 Months	7.0	21.6	60.6	10.8	287	29.6	2.53
SOC Last Job							1238.10**
Professional, Technical Clerk	56.1	18.4	24.6	0.9	114	11.8	
Skilled and Semi-skilled	2.3	84.5	12.3	0.9	219	22.6	
Unskilled	1.8	4.6	87.9	5.7	505	52.2	
Agriculture	0.0	1.3	40.8	57.9	76	7.9	
	1.9	3.7	59.3	35.2	54	5.6	
SOC Changed							18.43**
Same	9.3	24.8	57.2	8.7	484	50.0	
Similar	8.8	26.3	58.6	6.4	251	25.9	
Different	5.2	19.7	59.2	15.9	233	24.1	
Wages Increased	11.4	20.0	54.3	14.3	105	10.8	5.00
Last Employer's SIC Was Manufacturing	10.7	12.4	73.2	3.7	298	30.8	60.82
SIC Same or Similar	7.9	16.6	69.5	6.0	571	59.0	84.02**
Time Last Job Over One Month	5.1	21.8	65.6	7.5	294	30.4	12.22**

TABLE 4.19
 Comparison of White Collar with Blue Collar Applicants
 Among the Non-Freshers

	% White Collar	% Blue Collar	χ^2	LOGIT	OLS
All Non-Freshers	32.1	67.9			
Brahman	50.2	14.3	139.78**	0.78	9.08**
Harijan	1.9	10.4	20.02**	-0.01	-0.01
Education			396.96**	2.57**	0.18**
No Education	0.0	4.9			
Up to 10th Standard	3.2	66.8			
Matric and Above	96.8	28.3			
Had Technical Education	40.8	28.8	13.44**	0.004	0.01
Pune Born	16.7	32.9	26.72**	-0.61	-0.04
Single	70.1	65.3	1.98	-0.07	-0.01
Age (Mean) (t)	28.38	26.11	5.41**	0.31*	0.01
Marathi Mother Tongue	76.5	76.6	0.0	0.20	0.02
Knows English	99.4	63.5	143.07**		
Village Born	22.5	32.7	10.12**		
Worked on Farm	15.1	38.1	51.15**	-0.50	-0.04
Father Worked on Farm	30.2	48.9	26.18**		
Father Worked in Factory	13.5	17.8	2.54	-0.06	-0.01
First Job	48.2	52.7	1.49	0.36	0.02
Migrated for Job	30.9	34.7	1.23	-0.09	-0.003
Heard of Specific Job Opening	86.2	69.1	31.56**	0.11	0.01

TABLE 4.19 (cont.)

	% White Collar	% Blue Collar	χ^2	LOGIT	OLS
Heard of General Job Opening	11.6	24.7	21.41**		
Answered Ad	65.3	27.5	123.94**	1.76**	0.14**
Used Employment Exchange	41.8	46.1	1.42	-0.58	-0.03
Friends and Relatives Helped	25.1	47.2	42.03**	-0.01	-0.001
Applied Elsewhere	38.9	35.6	0.85		
Last Employer's SIC			68.22		
Primary-Agriculture, Mining	1.9	7.2			
Secondary-Manu- facturing	44.7	65.9			
Tertiary-Service	53.4	26.9			
Seniority Last Job Over 6 Months	73.6	68.8	2.14	-0.86**	-0.05**
SOC Last Job			598.49**		
Technical and Administrative	27.3	4.4		3.23**	0.52**
Clerk	61.1	4.4		3.94**	0.61**
Skilled and Semi-skilled	10.3	72.0			
Unskilled	0.3	11.4		-0.22	-0.06
Agriculture	1.0	7.8		-0.70	-0.05
Time Since Last Job Over 1 Month	25.4	32.7		0.32	0.01
SOC Same or Similar	81.4	73.4	6.94		
Last Employer's SIC was Manufacturing	22.2	34.9	15.31**	0.18	-0.03
SIC Same or Similar	45.0	65.6	36.13**		
R ²					0.0953

TABLE 4.20
**Comparison of Skilled and Semi-skilled Applicants
 with Unskilled Workers Among Non-Freshers**

	% Skilled and Semi-skilled	% Unskilled	χ^2	LOGIT	OLS
All Non-Freshers	85.5	14.5			
Brahman	15.7	6.3	5.05*	0.27	0.03
Harijan	10.1	11.6	0.06	-0.77	-0.09*
Education			60.38**	1.46*	0.04
No Education	2.8	16.8			
Up to 10th Standard	64.6	80.0			
Matric and Above	32.6	3.2			
Had Technical Education	32.7	5.3	28.61**	0.66	0.03
Pune Born	31.9	38.9	1.55	-0.07	-0.001
Single	67.1	54.7	4.93*	0.57	0.06*
Age (Mean) (t)	26.26	25.21	1.64	-0.23	-0.02*
Marathi Mother Tongue	74.6	88.4	7.95**	-0.69	-0.06*
Knows English	71.2	17.9	97.21**		
Village Born	30.6	45.3	7.28**		
Worked on Farm	34.3	60.0	21.62**	-0.36	-0.01
Father Worked on Farm	46.3	64.2	9.77**		
Father Worked in Factory	18.3	14.7	0.49	0.03	0.001
First Job	47.3	47.4	0.0	-0.14	-0.12
Migrated for Job	34.7	34.7	0.0	0.04	0.04
Heard of Specific Job Opening	73.5	43.2	33.61**	0.86**	0.09**

TABLE 4.20 (cont.)

	% Skilled and Semi-skilled	% Unskilled	χ^2	LOGIT	OLS
Heard of General Job Opening	20.8	47.4	29.42**		
Answered Ad	32.0	1.1	37.53**	2.49**	0.04
Used Employment Exchange	44.8	53.7	2.21	-0.37	-0.03
Friends and Relatives Helped	42.9	72.6	27.68**	-0.78*	-0.06*
Applied Elsewhere	36.7	29.5	1.53		
Last Employer's SIC			53.20**		
Primary-Agriculture, Mining	5.0	20.0			
Secondary-Manu- facturing	71.0	35.8			
Tertiary-Service	24.0	44.2			
Seniority Last Job Over 6 Months	69.0	67.4	0.04	0.32	0.02
SOC Last Job			170.63**		
Technical and Administrative	5.0	1.1		-0.33	-0.03
Clerk	4.8	2.1		0.67	-0.01
Skilled and Semi-skilled	79.0	30.5			
Unskilled	5.5	46.3		2.49**	-0.45**
Agriculture	5.7	20.0		1.13*	-0.21**
Time Since Last Job Over 1 Month	34.3	23.2	4.12*	-0.89**	-0.08**
SOC Same or Similar	75.4	61.1	7.89**		
Last Employer's SIC was Manufacturing	38.8	11.6	25.31**	-0.59	0.04
SIC Same or Similar	70.6	35.8	42.21**		
R ²					0.34

TABLE 4.21
**Comparison of Professional and Technical Applicants
 with Clerks Among Non-Freshers**

	% Professional and Technical	% Clerk	χ^2	LOGIT	OLS
All Hired Non-Freshers	25.4	74.6			
Brahman	57.0	47.8	1.61	0.91	0.04
Harijan	0.0	2.6	0.94		
Education			0.58	0.68	0.05
No Education	0.0	0.0			
Up to 10th Standard	1.3	3.9			
Matric and Above	98.7	96.1			
Had Technical Education	79.7	27.6	64.22**	1.92**	0.15**
Pune Born	10.1	19.0	2.70	-0.50	-0.02
Single	68.4	70.7	0.06	-0.17	-0.001
Age (Mean) (t)	27.91	28.53	0.69	0.25	0.01
Marathi Mother Tongue	70.9	78.4	1.48	-1.51*	-0.06
Knows English	98.7	99.6	0.00		
Village Born	16.5	24.6	1.78		
Worked on Farm	15.2	15.1	0.00	1.46*	0.07
Father Worked on Farm	30.4	30.2	0.00		
Father Worked in Factory	11.4	14.2	0.20	-0.08	-0.01
First Job	54.4	50.9	0.67	0.04	0.02
Migrated for Job	38.0	28.4	2.08	0.35	0.004

TABLE 4.21 (cont.)

	% Professional and Technical	% Clerk	χ^2	LOGIT	OLS
Heard of Specific Job Opening	79.7	88.4	2.98	-0.21	-0.01
Heard of General Job Opening	15.2	10.3	0.92		
Answered Ad	34.2	75.9	43.36**	-2.22**	-0.16
Used Employment Exchange	36.7	43.5	0.86	-0.87	-0.05
Friends and Relatives Helped	38.0	20.7	8.47**	0.70	0.04
Applied Elsewhere	45.6	36.6	1.62		
Last Employer's SIC			7.02		
Primary-Agriculture, Mining	2.5	1.7			
Secondary-Manu- facturing	57.0	40.5			
Tertiary-Service	40.5	57.8			
Seniority Last Job Over 6 Months	74.7	73.3	0.01	0.20	0.03
SOC Last Job			164.21**		
Technical and Administrative	81.0	9.1		2.26**	0.41
Clerk	6.3	79.7		-2.83**	-0.19
Skilled and Semi-skilled	11.4	9.9			
Unskilled	0.0	0.4			
Agriculture	1.3	0.9			
Time Since Last Job Over 1 Month	19.0	27.6	1.87	0.17	0.00
SOC Same or Similar	84.8	80.2	0.56		

TABLE 4.21 (cont.)

	% Professional and Technical	% Clerk	χ^2	LOGIT	OLS
Last Employer's SIC was Manufacturing	40.5	15.9	19.19**	1.19*	0.09*
SIC Same or Similar	57.0	40.9	5.48*		
R ²					0.61

regression analysis, indicating that their effect in the two-way tables has been confounded with the effect of some other variable, but the general pattern of social class differentiation, the nature of the job search, and previous employment remain important differences between applicants for white and blue collar jobs.

Contrasts between the two levels of skill within the broad job classes were somewhat more varied. The differences between applicants for skilled and semi-skilled jobs and for unskilled jobs were remarkably similar to the distinctions that marked off white from blue collar workers. The unskilled workers had less general education. 16.8% had no education and only 3.2% were matriculates, compared with 2.8% uneducated and 32.7% matriculates among the skilled and semi-skilled workers. And only 5.3% had any technical education at all, compared with 32.7% for those seeking jobs requiring some skill. The applicants for skilled and semi-skilled jobs were about a year and a half older than those seeking unskilled work; more likely to be single; less likely to have been born in a village or ever to have worked on a farm, although more likely to have migrated to Pune; more likely to have answered an advertisement, not to have used friends and relatives in the job search, to have come out of another factory job, and to have stayed in the same general industrial and occupational category while shifting employers.

The differences between clerks and technical and administrative workers were much less clear. In effect, the only variables that distinguished them in either the univariate or regression analyses are the facts that the technical and administrative workers were more likely to have had technical education, and to have already been employed in the manufacturing sector. The clerks seem especially to have favored answering advertisements as a strategy for job search; 75.9% of them did so, a proportion more than twice that of any other group. They seem also to have placed much less reliance on the use of friends and relatives in seeking a job. To sum up, sharp differences in social class, strategies of job search, and work experience distinguished

white from blue collar workers, and skilled and semi-skilled from unskilled workers; but essentially only technical education, experience in manufacturing and job search strategies effectively distinguished technical and administrative workers from clerks.

Who Was Hired?

While it is of interest to know something about the pool of applicants who presented themselves in the new labor market, it is of even greater interest to determine which of them were actually hired. How were they different from the rest of the applicants, and what does this say about the nature of the recruitment process and supply and demand in the new labor market? Before undertaking that analysis with the survey data, it must be noted that a crucial piece of information is missing. No information is available on the skill with which an applicant could actually perform the job for which he applied. Rather the data in the survey concentrate on what are essentially sociological and experiential variables that would be either important in themselves in the selection process or highly related to differences in skill. As will be seen, sometimes these variables played a role and sometimes they did not.

First, it will be recalled that fresh entrants to the labor market were hired almost as frequently as those with work experience; 17.4% of the fresher applicants were hired, and 20.7% of the non-freshers. Further, as Table 4.11 showed, the only variables distinguishing the freshers who were hired from the other applicants had to do with the job search – in particular, whether or not they applied in answer to an advertisement – and education. Aside from these variables, whatever the basis of selection was, it did not lie among the other characteristics of the applicants covered in the survey. Not only did no set of individual characteristics emerge as consistent predictors of the workers' chances of finding employment, but also the collective effort did not weigh very heavily in the selection process; R^2 for the summary predictive effect of all of the variables in the ordinary least squares regression was only 0.09.

Among the experienced applicants, for the most part, there was the same lack of consistent prediction. Few variables distinguished the non-freshers who were hired from those who were not. However, it has just been determined that the job market was clearly occupationally stratified, in that workers applying for different classes of jobs had different social and experiential characteristics. We may ask whether, on the company side, that the

proportion of those hired and the criteria for hiring also differed from one occupational class to another?

The first part of this question was answered earlier. As indicated in Table 4.3, the rates of hiring among applicants for different occupational classes differed appreciably. The highest success rate was among the professional and technical workers; 32.1% of all applicants for such positions were hired. The next highest was, surprisingly, among the unskilled applicants, 24.8% of whom were hired, rather than among the skilled and semi-skilled applicants, of whom 20.2% were hired. The lowest success rate was among the clerks (14.0%), indicating once again the extent to which the job market was swamped by applicants with high general education.

In answer to the second part of the question, the criteria that distinguished those hired from those not hired also varied by the occupational class of the job for which the worker was applying. Tables 4.22, 4.23, 4.24, and 4.25 present contrasts between those hired for each job class applied for. It should be said at the outset that individual cell frequencies are quite small as a result of dividing the non-freshers into four classes by the nature of the job applied for, then further dividing them into two or more categories on each of the independent variables, and finally splitting them into the two groups, those hired and those not hired. Accordingly, rather large differences in percentages are needed on many of the variables for them to emerge as statistically significant predictors. While the regression analyses are not subject to these limitations when numbers are small, the coefficients can be quite unstable. For this reason, the tables present for each variable the number of cases in which the distinction is based on that variable.

Even allowing for the small numbers problem, these tables have striking overall implications. Among three of the occupational groups, with exceptions to be noted, worker characteristics unrelated to differences in social status or broad features of past work experience seem to have determined who was hired and who was not. Presumably, the relative ability of the worker to perform the specific job for which he was applying had an overwhelming impact on the hiring decision, and these performance abilities did not correlate highly with the other personal characteristics of the applicant. Among applicants for clerical positions, however, where it would be more difficult to judge *a priori* differences in eventual job performance — since there is no particular machine or set of technical tasks that the applicant could be asked to demonstrate — the workers' social characteristics and broad work experience clearly entered into the selection process.

This generalization is a bit overdrawn; there were some differences between the applicants hired and not hired among those applying for non-

clerical jobs. As Table 4.22 shows, among those applying for professional and technical jobs, several features of the job search seem to have made a difference. Those who migrated to Pune in search of a job, those who had applied to more than one company, and those who registered with the Employment Exchange seem to have had a better chance of finding employment. In addition, those who had worked in manufacturing concerns rather than, say, the service sector, were more likely to be hired. Since almost all the applicants were drawn from upper status groups, distinctions based on social status characteristics – caste differences, general education, knowledge of English – were improbable. However, other variables that might have been expected to distinguish did not, and while the differences were not statistically significant, the direction of the differences was often contrary to what might have been expected. For instance, among applicants for professional and technical jobs, the hiring rate for those who had had formal technical education (34.9%) was somewhat lower than the general rate for this group (36.7%); the village-born had a higher success rate than the urban-born; and those who had formerly been employed as skilled or semi-skilled workers had a better chance of being hired than even those who had previously worked in the professional and technical classes.

Among the applicants for skilled and semi-skilled jobs (Table 4.23), a few of the social status variables came into play. Being a Brahman helped, even with all other variables held constant. Multiple applications seem to have made the individual application more likely of success; or perhaps those who were enterprising enough to make and to admit to having made multiple applications were more worthy of employment. Aside from these differences, few others emerged clearly, including ones that might have been expected to distinguish. Moreover, while none of them was statistically significant, in several cases the effect was opposite to what might have been expected. Passing the matriculate exam and having formal technical education did not matter, nor did the use of the Employment Exchange.

In distinguishing who would be hired among the unskilled workers (Table 4.24), only those married, those previously employed in agriculture or unskilled work, and those who had worked at those jobs for a considerable period of time had a greater chance of employment. This group especially, however, was small and relatively homogenous on many variables, so that significant differences between those hired and those not hired were not likely to emerge.

It was the clerks (Table 4.25) for whom social status and work experience were most influential in determining who was and was not hired. Brahmans were more likely to be hired, as were those with some technical, as distinct

TABLE 4.22
 Characteristics of Hired Versus Not Hired
 Professional and Technical Non-Fresher Workers

	Total Number	% Hired	LOGIT	OLS
All Professionals and Technicals	79	36.7		
Brahman	45	31.1	-0.40	-0.07
Harijan	0	0.0		
Education				
No Education	0	0.0		
Up to 10th Standard	1	0.0		
Matric and Above	78	37.2		
Had Technical Education	63	34.9	-0.80	-0.15
Pune Born	8	50.0	0.21	
Single	54	35.2	-0.86	-0.13
Age (Mean Difference)			-1.06	-0.03
Marathi Mother Tongue	56	37.5	0.30	-0.08
Knows English	78	37.2		
Village Born	13	53.8		
Worked on Farm	12	25.0	-1.68	-0.23
Father Worked on Farm	24	37.5		
Father Worked in Factory	9	44.4	0.22	0.02
First Job	43	37.2	0.31	0.03
Migrated for Job	30	46.7	1.09	0.16
Heard of Specific Job Opening	63	41.3	1.09	0.14
Heard of General Job Opening	12	25.0		

TABLE 4.22 (cont.)

	Total Number	% Hired	LOGIT	OLS
Answered Ad	27	29.6	-0.04	-0.01
Used Employment Exchange	29	55.2*	1.65*	0.30*
Friends and Relatives Helped	30	40.0	0.43	0.06
Applied Elsewhere	36	55.6**		
Last Employer's SIC				
Primary-Agriculture, Mining	2	50.0		
Secondary-Manufacturing	45	44.4		
Tertiary-Service	32	25.0		
Time til Next Job Under 1 Month	15	26.7	0.56	0.08
Seniority Last Job Over 6 Months	59	35.6	0.38	0.05
SOC Last Job				
Professional, Technical	64	35.9		
Clerk	5	40.0		
Skilled and Semi-skilled	9	44.4		
Unskilled	0	0.0		
Agriculture	1	0.0		
SOC Same or Similar	67	38.8		
Last Employer's SIC was Manufacturing	32	50.0	1.17	0.21*
SIC Same or Similar	45	44.4		
R ²				0.37

TABLE 4.23
 Characteristics of Hired Versus Not Hired
 Skilled and Semi-Skilled Non-Fresher Workers

	Total Number	% Hired	LOGIT	OLS
All Skilled and Semi-skilled	562	20.3		
Brahman	88	28.4*	0.68	0.12*
Harijan	57	22.8	0.27	0.05
Education			0.07	0.01
No Education	16	50.0		
Up to 10th Standard	363	19.3		
Matric and Above	183	19.7		
Had Technical Education	184	16.3	-0.38	-0.06
Pune Born	179	21.2	0.32	0.05
Single	377	19.6	-0.19	-0.03
Age (Mean Difference)		+0.17	-0.02	-0.003
Marathi Mother Tongue	419	20.5	0.03	0.01
Knows English	400	21.0		
Village Born	172	21.5		
Worked on Farm	193	20.2	-0.01	0.001
Father Worked on Farm	260	19.2		
Father Worked in Factory	103	18.4	-0.81	-0.01
First Job	266	19.5	-0.11	0.02
Migrated for Job	195	23.1	0.38	0.06
Heard of Specific Job Opening	413	21.5	0.60	0.10*
Heard of General Job Opening	117	20.5		
Answered Ad	180	12.8		-0.12**

TABLE 4.23 (cont.)

	Total Number	% Hired	LOGIT	OLS
Used Employment Exchange	252	21.0	0.09	0.01
Friends and Relatives Helped	241	24.1	0.08	0.01
Applied Elsewhere	206	26.7**		
Last Employer's SIC				
Primary-Agriculture, Mining	28	28.6		
Secondary-Manufacturing	399	19.3		
Tertiary-Service	135	21.5		
Time til Next Job Over 1 Month	193	21.8	-0.12	0.02
Seniority Last Job Over 6 Months	388	20.6	-0.16	0.03
SOC Last Job				
Professional, Technical	28	25.0		
Clerk	27	14.8		
Skilled and Semi-skilled	444	19.8		
Unskilled	31	19.4		
Agriculture	32	28.1		
SOC Same or Similar	424	19.8		
Last Employer's SIC was Manufacturing	218	21.1	0.21	0.03
SIC Same or Similar	397	19.1		
R ²				0.05

from general education. Those hired were more likely to have been born in Pune, or more generally, to be urban in origin, to have worked for a number of employers, to have applied to more than one company, not to have applied in response to an advertisement, and to have had the help of friends and relatives in securing the job. In short, in the clerical marketplace, as distinct from the other job categories, who you were and how you went about applying for a job seemed to be the most important selection criteria.

TABLE 4.24
 Characteristics of Hired Versus Not Hired
 Unskilled Non-Fresher Workers

	Total Number	% Hired	LOGIT	OLS
All Unskilled	95	26.3		
Brahman	6	33.3		
Harijan	11	18.2		
Education				
No Education	16	12.5		
Up to 10th Standard	76	30.3		
Matric and Above	3	0.0		
Had Technical Education	5	40.0		
Pune Born	37	18.9	-0.80	-0.13
Single	52	21.2	-1.42*	-0.26*
Age (Mean Difference)			-0.01	-0.66
Marathi Mother Tongue	84	25.0	-0.06	-0.01
Knows English	17	29.4		
Village Born	43	32.6		
Worked on Farm	57	28.1	0.35	0.07
Father Worked on Farm	61	32.8	0.20	
Father Worked in Factory	14	35.7		
First Job	45	22.2	-0.83	-0.13
Migrated for Job	33	33.3	0.05	0.02
Heard of Specific Job Opening	41	24.4	-0.38	-0.07
Heard of General Job Opening	45	31.1		
Answered Ad	1	0.0		

TABLE 4.24 (cont.)

	Total Number	% Hired	LOGIT	OLS
Used Employment Exchange	51	27.5	0.58	0.09
Friends and Relatives Helped	69	24.6	-0.16	-0.02
Applied Elsewhere	28	21.5		
Last Employer's SIC				
Primary-Agriculture, Mining	19	31.6		
Secondary-Manufacturing	34	14.7		
Tertiary-Service	42	33.3		
Time Until Next Job				
Over 1 Month	22	31.8	-0.44	
Seniority-Last Job				
Over 6 Months	64	32.8	-1.43*	-0.22*
SOC Last Job				
Professional, Technical	1	0.0		
Clerk	2	0.0		
Skilled and Semi-skilled	29	17.2		
Unskilled	44	29.5		
Agriculture	19	36.8		
SOC Same or Similar	58	25.9		
Last Employer's SIC was				
Manufacturing	11	36.4	1.12*	0.19
SIC Same or Similar	34	14.7		
R²				0.16

TABLE 4.25
 Characteristics of Hired Versus Not Hired
 Among Clerk Non-Fresher Workers

	Total Number	% Hired	LOGIT	OLS
All Clerks	232	14.7		
Brahman	111	20.7*	2.04**	0.16**
Harijan	6	0.0		
No Education			3.61**	-0.25**
No Education	0	0.0		
Up to 10th Standard	9	33.3		
Matric and Above	223	13.9		
Had Technical Education	64	28.1**	2.69**	0.19*
Pune Born	44	25.0	2.96**	0.19*
Single	164	14.0	-0.22	-0.02
Age (Mean Difference)		-0.18	-0.18	0.01
Marathi Mother Tongue	182	16.5	0.59	0.08
Knows English	231	14.3		
Village Born	57	3.5*		
Worked on Farm	35	11.4	-0.75	-0.06
Father Worked on Farm	70	10.0		
Father Worked in Factory	33	12.1	0.04	-0.01
First Job	118	16.9	1.89**	-0.10*
Migrated for Job	66	24.2*	2.72**	0.18*
Heard of Specific Job Opening	205	14.1	-1.04	-0.12
Heard of General Job Opening	24	20.8		
Answered Ad	176	5.7**	-3.04**	-0.34*

TABLE 4.25 (cont.)

	Total Number	% Hired	LOGIT	OLS
Used Employment Exchange	101	16.8	0.24	0.01
Friends and Relatives Helped	48	29.2**	0.93	0.03
Applied Elsewhere	85	23.5**		
Last Employer's SIC				
Primary-Agriculture, Mining	4	25.0		
Secondary-Manufacturing	94	12.8		
Tertiary-Service	134	15.7		
Time Until Next Job Over 1 Month	64	17.2	-0.07	-0.02
Seniority Last Job Over 6 Months	170	13.5	0.60	0.09
SOC Last Job				
Professional, Technical	21	14.3		
Clerk	185	13.5		
Skilled and Semi-skilled	23	21.7		
Unskilled	2	0.0		
Agriculture	1	50.0		
SOC Same or Similar	136	13.4		
Last Employer's SIC was Manufacturing	37	16.2	-0.68	0.01
SIC Same or Similar	95	13.7		
R ²				0.37

The Hired As Job Changers

In questions relating the jobs that the workers left with the jobs into which they were re-employed, attention focuses on being re-employed. In the case of the two earlier studies, this is the group of the subset of hired non-freshers, 202 applicants in all, the only group of applicants who had an old

and a new job to compare. From these applicants, data were collected on four job change characteristics which parallel data collected in the earlier studies. Two have to do with the job search procedure: (1) who took a short or a long time to find re-employment after leaving the old one, and (2) paralleling those in the earlier studies who left Pune in search of a new job, who migrated to Pune in search of a job, and who did not? The other two characteristics of the job exchange have to do with direct comparisons between the old and the new job: (1) did the worker remain in the same occupation, and (2) was there a wage increase as a result of the move?

The Job Search Among Those Hired

First, a few general comments on the nature of the search process for all the applicants are in order. As might be expected, given the higher educational level of the new sample, the relative modernity of the new factory management, and the higher skill levels of the jobs being sought, it is not surprising that there was greater recourse to formal job search mechanisms. Most applicants applied by mail (71.3%); only 28.7% appeared at the gate to inquire about a job. Among the leavers in the old factory sample, only 36.6% had entered a written application. There was a substantial increase in the use of printed media for information; 33.8% indicated that they had first heard of a job opening through newspapers, and almost half (43.0%) applied in response to an advertisement. Far fewer (19.4%) of those leaving the old factories were answering ads when they applied for a new job. Most (73.6%) of those applying to the new factories had heard that there were specific job openings, while 21.3% had heard that there was general hiring in progress. Few applied without first having some information that jobs were being filled in those particular factories. It is interesting to note that the traditional sources of information were still important; 39.9% heard of a job opening through the network of friends and relatives. The equivalent figure for the use of friends and relatives was 31.3% among the old factory leavers.

In the new labor market, neither the Employment Exchange nor the schools, technical or other, were efficient sources of job information: 1.5% of the workers were notified of job openings through these educational institutions, and only 1.3% reported hearing of openings through the Employment Exchange — this in spite of the fact that 47.0% were registered there, and that the companies were bound by law to offer jobs to qualified workers sent by the Employment Exchange in preference to the general applicant pool.

Among the leavers in the old market, 24.2% had been registered, but 7.9% indicated that the Exchange had helped them find a new job. Once again unions played almost no role in the employment market. Most applicants applied to only one company at a time; only 35.0% reported applying to more than one company, and most of these (34.8%) oddly enough, applied both inside and outside the factory sector. To summarize, except for greater recourse to written applications and published information, the job search process had changed somewhat less than might have been expected.

Did those who were hired differ appreciably from the general run of applicants in the way they went about the job search? One major difference is that only 20.4% of those hired applied in response to an ad, compared with 44.8% of those who were not hired. Perhaps because the advertisements temporarily swelled the normal flow of applicants, those answering ads were less likely than others actually to be hired. On the other hand, more of those who had the help of friends and relatives were hired; 50.0% of the applicants hired and 37.5% of those not hired had such assistance. Registration with the Employment Exchange remained about the same: 49.5% of those hired compared with 43.5% of those not hired used the Exchange. Considering these variables with reference to the general applicant pool — not simply the hired non-freshers — brings the old and the new labor markets even closer.

While the search processes in the new and the old markets may have been relatively similar, in the new labor market, with demand supposedly high relative to supply, one would expect the duration of the job search to have declined. To the extent that there was a decline, it was rather modest; in the new labor market, 31.7% of the hired non-freshers had been out of work for more than a month, compared with 35.9% among the re-employed leavers in the old factories. 55.7% of the applicants were still employed at the time of application, compared with 46.5% of those in one of the old factories who had already lined up a new job elsewhere before leaving the first. The change between the markets was not quite as dramatic as might have been expected. Moreover, it still took about a third of the workers over a month to get a new job.

Perhaps the reason for this seeming stability in the duration of the job search is that the new factory sample mixes together groups for whom there was little effective demand and groups for whom demand was high. To resolve this matter, Table 4.26 contrasts those non-fresher applicants who took less than a month to find a new job with those who took longer.

TABLE 4.26
 Predictors of Long Search Among Non-Freshers, Hired

	Total Number	% Over One Month	LOGIT	OLS
All Hired Non-Freshers	202	31.7		
Brahman	64	23.4	-0.76	-0.12
Harijan	15	60.0*	1.33*	0.29*
Education			0.92	0.16
No Education	10	40.0		
Up to 10th Standard	96	32.3		
Matric and Above	96	30.2		
Had Technical Education	72	34.7	0.86	0.16
Pune Born	60	36.7	0.59	0.10
Single	127	30.7	0.02	0.002
Age (Mean Difference in Yrs.)	26.71	0.36	0.12	0.02
Marathi Mother Tongue	158	34.2	0.92	0.15
Knows English	151	31.8		
Village Born	60	31.7		
Worked on Farm	62	41.9*	0.57	0.11
Father Worked on Farm	86	39.5*		
Father Worked in Factory	32	37.5	0.37	0.07
First Job	98	31.7	0.17	0.03
Migrated for Job	86	32.6	0.18	0.03
Heard of Specific Job Opening	154	31.2	-0.13	-0.02
Heard of General Job Opening	46	37.0		
Answered Ad	41	36.6	0.76	0.12
Used Employment Exchange	100	36.0	0.43	0.07

TABLE 4.26 (cont.)

	Total Number	% Over One Month	LOGIT	OLS
Friends and Relatives Helped	101	32.7	0.10	0.01
Applied Elsewhere	101	29.7		
SOC Applied For				
Technical and Administrative	29	13.8	-0.82	-0.13
Clerk	34	32.4	0.52	0.09
Skilled and Semi-skilled	114	36.8		
Unskilled	25	28.0	-0.91	0.15
Last Employer's SIC				
Primary-Agriculture, Mining	16	56.3*		
Secondary-Manufacturing	114	32.5		
Tertiary-Service	72	25.0		
Seniority Last Job Under 6 Months	57	31.6	-0.10	-0.02
SOC Last Job				
Technical and Administrative	33	15.2	-1.25	-0.21
Clerk	31	22.6	-1.42	-0.26
Skilled and Semi-skilled	102	36.3		
Unskilled	19	31.6	0.47	0.07
Agriculture	17	52.9	1.30	0.23
SOC Same or Similar	105	35.2	0.06	0.02
Wages Increased	105	46.9		
Last Employer's SIC was Manufacturing	72	27.8	-0.26	-0.04
SIC Same or Similar	114	32.5		
R²				0.18

Very few variables distinguished these groups in either the tabular or the regression analyses. In fact, the only difference that appears to be important

in both types of analysis is that Harijans seem to have taken longer to find employment, and this in spite of the fact that there were in effect legal affirmative action prescriptions requiring that they be given hiring preference. As might be expected, the professional and technical workers seem to have been hired a little more quickly than the other workers, and it seems to have taken agriculturists a little longer to find a job, but statistically these differences were not consistently significant.

While the length of time spent seeking a job had decreased somewhat but not precipitously, the market had become considerably more inward drawing. 31.9% of those leaving the old factories had left Pune to find the next job. In the new market, 42.6% of those hired in the new factories had come from outside Pune in search of those jobs. Clearly, the geographic domain of recruitment for those actually hired, as compared with the applicant pool in general, had increased since the old labor market.

What distinguished the job migrants hired from the non-migrants? In the cross tabulations of Table 4.27, they tend to be slightly older and more likely to be married than the non-migrants, but these differences disappear in the multivariate analysis. The most important differentiation is that the migrants tended to be village-born, had at one time worked on a farm, and had fathers who had worked on a farm. In short, the job migrants hired were much more likely to have had some earlier connection with agriculture, the same tendency found in the applicant pool in general.

Skill Transfer by Those Hired

As noted earlier in this chapter, the data on the applicant pool indicate that the new labor market had a higher degree of occupational specificity and potential skill transfer than the old one. Was this promise of skill transfer realized among those actually hired? That is, were the workers who were hired placed in occupations similar to the ones they last held? Since the workers were just entering the new jobs, no subjective estimation of skill transfer was available. Instead, once again the Standard Occupational Classification numbers were compared: the occupations were considered to be similar if the first and second digits were the same in both. Among those leaving the old factories, only 31.9% of those re-employed remained in the same or similar occupations. Among the non-freshers hired in the new market, 74.3% were hired into occupations similar to those they had held earlier, about the same percentage of non-freshers in the entire applicant pool who were applying for jobs in the same broad occupational category.

TABLE 4.27
Migration for Jobs Among Hired Non-Freshers

	Total Number	% Migrated for Job	LOGIT
All Hired Non-Freshers	202	42.6	
Brahman	64	43.8	0.04
Harijan	15	26.7	-0.15
Education		**	1.17**
No Education	10	70.0	
Up to 10th Standard	96	33.3	
Matric and Above	96	49.0*	
Had Technical Education	72	51.4	0.63
Pune Born	60	0.0	
Single	127	35.4	-0.55
Age (Mean Difference) (t)	26.71	+1.89**	0.17
Marathi Mother Tongue	158	39.2	-0.69
Knows English	151	42.4	
Village Born	60	61.7**	
Worked on a Farm	62	59.7**	1.32**
Father Worked on Farm	86	58.1**	
Father Worked in Factory	32	40.6	-0.27
First Job	98	35.7	-0.83*
Heard of Specific Job Opening	154	39.0	-0.42
Heard of General Job Opening	46	52.2	
Answered Ad	41	39.0	-0.45
Used Employment Exchange	100	36.0	-0.59
Friends and Relatives Helped	101	39.6	-0.35

TABLE 4.27 (cont.)

	Total Number	% Migrated for Job	LOGIT
Applied Elsewhere	101	43.6	
SOC Applied For			
Technical and Administrative	29	48.3	0.13
Clerk	34	47.1	0.59
Skilled and Semi-skilled	114	39.5	0.16
Unskilled	25	44.0	0.16
Last Employer's SIC			
		*	
Primary-Agriculture, Mining	16	68.8	
Secondary-Manufacturing	114	43.0	
Tertiary-Service	72	36.1	
Seniority Last Job Under 6 Months	57	43.9	0.01
Time Since Last Job Under 1 Month	138	67.4	0.09
SOC Last Job			
Technical and Administrative	33	48.5	0.11
Clerk	31	41.9	-0.94
Skilled and Semi-skilled	102	39.2	
Unskilled	19	31.6	-0.65
Agriculture	17	64.7	0.16
SOC Same or Similar	105	47.6	0.16
Wages Increased	105	47.7	
Last Employer's SIC was Manufacturing	72	40.3	0.31
SIC Same or Similar	114	42.0	

TABLE 4.28
 Predictors of Same or Similar SOC
 Among Non-Freshers Hired

	No. Same or Similar SOC	% Same or Similar SOC	LOGIT	OLS
All Hired Non-Freshers	202	74.3		
Brahman	64	78.1	0.56	0.06
Harijan	15	86.7	1.00	0.12
Education			1.32	-0.18*
No Education	10	30.0		
Up to 10th Standard	96	77.1		
Matric and Above	96	76.0*		
Had Technical Education	72	80.6	1.21*	0.16*
Pune Born	60	76.7	0.53	0.07
Single	127	76.4	0.16	0.01
Age (Mean Difference in Yrs.)	26.71	-0.55	-0.03	0.003
Marathi Mother Tongue	158	74.7	0.07	0.004
Knows English	151	80.1**		
Village Born	60	63.3*		
Worked on Farm	62	54.8**	-0.66	-0.10
Father Worked on Farm	86	67.4		
Father Worked in Factory	32	75.0	0.003	0.002
First Job	98	70.4	-0.01	-0.001
Migrated for Job	86	70.9	-0.12	-0.01
Heard of Specific Job Opening	154	79.2**	0.50	0.74
Heard of General Job Opening	46	56.5**		

TABLE 4.28 (cont.)

	No. Same or Similar SOC	% Same or Similar SOC	LOGIT	OLS
Answered Ad	41	90.2*	0.88	0.09
Used Employment Exchange	100	71.0	-0.74	-0.09
Friends and Relatives Helped	101	67.3*	-0.21	-0.03
Applied Elsewhere	101	79.2		
SOC Applied For	*			
Technical, Administrative	29	89.7	2.47*	0.39**
Clerk	34	73.5	-0.14	-0.004
Skilled and Semi-skilled	114	73.7		
Unskilled	25	60.0	-1.29	-0.15
Last Employer's SIC	**			
Primary-Agriculture, Mining	16	6.3		
Secondary-Manufacturing	114	89.5**		
Tertiary-Service	72	65.3		
Time Until Next Job Over 1 Month	138	70.7	-0.11	-0.01
Seniority Last Job Under 6 Months	57	71.9	-0.41	0.07
SOC Last Job	**			
Technical, Administrative	13	69.7	2.69**	-0.43
Clerk	37	80.6	0.19	0.004
Skilled and Semi-skilled	102	86.3**		
Unskilled	19	68.4	-1.47	-0.19
Agriculture	17	5.9	-4.45**	-0.71**
Wages Increased	105	56.7		
Last Employer's SIC was Manufacturing	72	88.9**	0.60	0.09

TABLE 4.28 (cont.)

	No. Same or Similar SOC	% Same or Similar SOC	LOGIT	OLS
SIC Same or Similar	114	88.6		
R ²				0.39

Turning to the selectivity question, what distinguished those who remained within the same occupational group from those who did not? It is clear that all variables indicating a transferable skill turned out to be the predictors of who would and who would not carry over his occupation from one job to another: general education, technical education, knowledge of English, application for a specific job. Professional and technical workers, the skilled and semi-skilled, and those whose last job was in manufacturing were also more likely to carry their occupation with them in the job exchange. The rural-based section — village-born, worked on a farm, father worked on a farm, and last employed in agriculture — was clearly less likely to transfer skills. Where there was skill to be transferred, it was more likely to occasion an occupation-specific job change, and for a larger number of workers such a carry-over was possible.

Wage Gains

The final comparison of new and old jobs among the non-freshers hired was whether or not the worker got higher wages in the new job. It will be recalled that among the job leavers in the old labor market, the chances were about even that a worker making a job change would improve himself economically: 58.3% of those re-employed in the old market gained in wages as a result of the job exchange. In view of the fact that the new labor market was supposed to be one in which demand exceeded supply, those hired in the new factory work force might also have been expected to show a high proportion of wage gainers. This turned out not to be so. Only 52.0% of the workers hired in the new market gained in wages as a result of the job change, about the same percentage as those leaving the old factories.

Wage increases might have been expected at least for the workers with the especially scarce skills. However, the professional and technical workers hired were even less likely to get wage increases, and the skilled and semi-

skilled only a little more likely, but in neither case was the difference significant. Even more specifically, metal workers tended to get a wage increase only slightly more often than the general average; 56.6% went up in wages between the two jobs. This is a curious finding. Just what was it that the companies were using to recruit workers, if the market was as tight as general opinion held it to be? It certainly does not seem to have been wage increase at the outset, although it conceivably could have been the promise of more rapid and more substantial mobility once the worker was hired.

The relatively low importance of wage differentials in the new job market is re-inforced by comparing those who did gain in wages with those who did not, in Table 4.29.

Except for the tendency of agriculturists not to gain in wages, a curious fact in itself, and a greater likelihood that unskilled workers would make out better economically in the job market, another curious finding, little else distinguished those who gained from those who lost financially in the exchange. This is the same conclusion that emerged from an analysis of the job leavers in the old labor market. Whatever else drove this job market, wages seem to have played a small and ambiguous role.

Summary

1. The late 1950s and early 1960s saw a period of rapid industrialization in Pune. A high demand for labor and a scarcity of high-technology industrial skills were anticipated. To examine the operation of the labor market in such a situation, 13 factories, 11 of them newly established, were chosen for analysis.

2. The supply of applicants seems to have exceeded the demand. There were two and a half times as many applicants as company forecasts of demand stipulated, and five times as many applicants as workers hired.

3. Skilled workers, particularly metal workers, were expected to be in short supply. It is true that the number of applicants was more evenly matched to the stated demand, but there were still 2.7 applicants for a metal working job for each worker hired.

4. The geographic domain of the labor market had expanded. The new market employed more migrants — defined as having been born outside Pune — and a substantial proportion of the migrants had come to Pune recently and specifically in search of jobs. However, the bulk of the migrants still came from within Maharashtra. A significant proportion of the migrants

had once lived in a rural area, but relatively few came directly from a village or were working in agriculture at the time of application.

5. The rapid industrialization of Pune was preceded by a great increase in the general educational qualifications of young males in Pune, as well as a developing pool of those with some formal technical education.

6. A large number of fresh recruits to the labor force were applying to the new factories, drawn largely from the new corps of secondary-school graduates in the Pune population. These freshers were hired in about the same proportion as those applicants who had had previous work experience. The freshers applied for all kinds of jobs except the unskilled ones.

7. The new labor market had become much more occupationally specific. Only about a third (31.97%) of the workers leaving the old factories were rehired into similar occupations. In the new market, while less than half (40.7%) of the workers had the same occupation as their fathers, 73.3% of the non-fresher applicants were applying for jobs the same as or similar to the ones they last held.

8. The employment market was occupationally stratified in another sense. Workers applying for the various types of jobs differed significantly from one another. White collar workers were drawn from a higher social class than blue collar workers, and within the blue collar class, the skilled and semi-skilled workers came from a higher social class than the unskilled. Differences between professional and technical workers and clerks were more limited and ambiguous.

9. Both the rates of hiring and the selective process by which those hired were chosen differed by the occupational class applied for. Only in the case of the clerks did the variables used in these studies distinguish those who were hired from unsuccessful applicants, and among the clerks, both personal characteristics and work experience made the difference.

10. In searching for a job, workers in the new market tended to use formal search mechanisms more frequently, although the use of friends and relatives remained high.

11. There was surprisingly little diminution of the time taken to find a new job, and most workers still left one job before they had secured the next one.

12. The trend toward geographic extension of the market and the increase in skill transfer which were evident in the analysis of the applicant pool also appeared among the subset of those hired.

13. An anticipated increase in the proportion of workers who gained in wages through the job change did not materialize, another indication that this was not really a high-demand and high-scarcity labor market.

TABLE 4.29
Hired Non-Freshers Who Gained Wages

	Total Number	% Gained Wages	LOGIT	OLS
All Non-Freshers	202	52.0		
Brahman	64	59.4	0.43	0.09
Harijan	15	46.7	-0.04	-0.01
Education				
No Education	10	30.0		
Up to 10th Standard	96	51.0		
Matric and Above	96	55.2		
Had Technical Education	72	55.6	0.33	0.06
Pune Born	60	58.3	0.31	0.06
Single	127	56.7	0.17	0.04
Age (Mean Difference in Yrs.)	26.71	-1.08	-0.07	-0.07
Marathi Mother Tongue	158	51.9	-0.38	-0.08
Knows English	151	54.3		
Village Born	60	50.0		
Worked on Farm	62	43.5	-0.16	0.04
Father Worked on Farm	86	41.8		
Father Worked in Factory	32	53.1	0.001	0.01
First Job	98	48.1	0.55	-0.11
Migrated for Job	86	47.7	-0.01	-0.12
Heard of Specific Job Opening	154	54.5	0.33	0.08
Heard of General Job Opening	46	43.5		
Answered Ad	41	56.1	0.02	0.002
Used Employment Exchange	100	51.0	0.08	-0.03

TABLE 4.29 (cont.)

	Total Number	% Gained Wages	LOGIT	OLS
Friends and Relatives Helped	101	51.5	0.28	0.05
Applied Elsewhere	101	56.4		
SOC Applied For				
Technical and Administrative	29	41.4	-0.79	-0.19
Clerk	34	61.8	0.13	0.04
Skilled and Semi-skilled	114	50.0		
Unskilled	25	60.0	2.10**	0.39**
Last Employer's SIC				
Primary-Agriculture, Mining	16	12.5		
Secondary-Manufacturing	114	48.8**		
Tertiary-Service	72	50.0		
Seniority Last Job Over 6 Months	145	50.3	0.13	0.04
SOC Last Job				
Technical and Administrative	33	45.5	-0.35	0.07
Clerk	31	61.3	0.06	0.02
Skilled and Semi-skilled	102	56.9		
Unskilled	19	47.4	-0.45	-0.26
Agriculture	17	23.5	-2.03*	-0.37*
Time Since Last Job Over 1 Month	64	46.9	0.21	0.04
SOC Same or Similar	105	81.0	0.40	0.10
Last Employer's SIC was Manufacturing	72	55.6	0.24	0.05
SIC Same or Similar	114	58.8		
R²				0.13

Chapter V

Job Changing in the New Market

Having examined in detail the applicant pool and the selectivity of the hiring process, the analysis now comes full circle, examining the workers who left the new factories and comparing them with the workers who left the old factories. As indicated in Chapter I, the data for this analysis derive from interviews with those who left a job in one of the new factories between 11 January and 30 April 1965, some 414 workers in all. The questionnaire was designed to be as similar as possible to the one used with the workers leaving the factories in the 1957 sample. Hence a detailed comparison can be made of the old and new labor markets in terms of the characteristics of those leaving the jobs, the nature of their behavior in the search for a new job, and the kinds of new jobs they got.

The domains of analysis are by now familiar. How much turnover was there? How many of the separations were voluntary, and what distinguished the workers whom the company discharged from those who left at their own initiative? Had the reasons for voluntary or involuntary departures changed between the two job markets? What kinds of people were re-entering the job market, and how did they compare with those leaving the old market? Did the new market make for a higher or a lower unemployment rate, and how did those who dropped out of the labor market compare in the two studies? Did the workers use the same mechanisms as they searched for new jobs, and with the same relative success rates? Was there a greater tendency to remain in the factory sector now that there were many more factories in which to find jobs? Had there been an increase in the extent to which workers carried skills from one job to the other? Were they more likely to have gained in wages in the transfer? Did they feel that the new jobs were an improvement on the old ones, and in what respects?

At each stage, the shift between the old and the new factories will be noted as to the operation of the market in general, and as to the worker characteristics which distinguished one or another type of market behavior. At the same time, an attempt will be made to clarify further the picture of the new market that emerged in the analysis of applicants and the hiring process. Did the rapid expansion of demand for skilled labor affect the nature of turnover in the same way that it influenced the profile of the offering labor force and the intake process? Were turnover and recruitment linked, or were

those applying to and entering the new factories different from those who were leaving them?

The Volume of Turnover

Given the rapid growth the new factories were experiencing and the extensive testing of the newly hired workers' suitability for these jobs, testing on the part of both the worker and the company, a high rate of turnover might have been expected. Was this in fact a highly unstable labor force? Table 5.1 presents the monthly separation and quit rates for each of the new factories, together with comparable figures for the equivalent industries in Maharashtra, all of India, and the United States.

It can be seen that differences among the 13 companies were not very great, although the newly established wing of the textile mill, and the motor scooter and the diesel engine factories, the ones undergoing most rapid expansion at the time of the survey, did have somewhat higher rates, both separations and quits, than the others. The lowest rate was that in the oil engine factory, the one carried over from the old factory sample. It was the only factory in the sample that had passed beyond the early growth stage almost a decade earlier, and it would have been expected to have had a more stable work force.

Second, the two industries represented in the sample seem normally to have had different turnover rates, and these were reflected in the Pune sample. The mean separation and quit rates for the sample factories in the non-electrical machinery industry were 1.6 and 1.1 respectively, compared with 1.9 and 0.7 among the factories in the electrical products industry.

Third, the mean separation and quit rates for the factories in the sample were considerably lower than those characteristic of Maharashtra as a whole or all of India, and were the same as or lower than those found in an industrialized country like the United States.

Fourth, going beyond this table, there was an increase in turnover between the old and new markets. The mean monthly separation rate of the factories in the 1957 sample was 0.5 per hundred workers per month, and the mean quit rate was 0.9. Among the new factories in the non-electrical machinery industry, the equivalent rates were 1.6 and 1.1, and among the companies in the electrical products industry, 1.0 and 0.7. These increases in turnover rates were not just the result of differences in the industrial composition of the 1957 sample and the new factories, since the two industries

TABLE 5.1

Mean Monthly Separation and Quit Rates per 100 Workers
in Sample Factories and in Maharashtra (January – April 1965)

Non-Electrical Machinery

Product	Separation Rate	Quit Rate
Textile Machinery	3.9	3.3
Oil Engines	0.4	0.2
Drills	1.6	1.6
Machine Tools I	2.1	1.2
Machine Tools II	0.5	0.2
Scooters	3.3	2.3
Diesel Engines	3.2	2.5
Compressors	<u>1.5</u>	<u>1.1</u>
TOTAL	1.6	1.1
Maharashtra State	3.4	
India		1.7
United States		1.0

Electrical Products

Product	Separation Rate	Quit Rate
X-Ray Equipment	0.9	0.6
Fans	1.1	0.8
Electrical Instruments	0.6	0.4
Wire	1.6	1.1
Cable	<u>0.7</u>	<u>0.6</u>
TOTAL	1.0	0.7
Maharashtra State	2.3	
India		1.4
United States		1.0

represented in the new sample generally had lower, not higher, turnover rates than those represented in the old sample — textiles, paper products, food products, rubber products.

Finally, as testimony to the reliability of measurement in the two samples, the oil engine factory, which appeared in both the old and the new factory samples, had the same separation and quit rates in each study. The continuity in rates in this factory between 1957 and 1963 and in 1965 indicates that an increase in turnover reflected not so much a shift in the market *per se* as the growth stage of these factories in Pune. Presumably, as their work-forces stabilized, their turnover rates would decline as well. Thus, there was some increase in turnover among the new factories, but it was not as great as might have been expected, and turnover was still low compared with what was normal for these industries elsewhere.

Why Workers Changed Jobs

In the analysis of the old labor market, it became apparent that a substantial portion (41.9%) of the separations took place at the company's initiative rather than the worker's. It was remarked then that the notion of under-commitment on the part of the worker should at least be supplemented with a notion of under-commitment on the part of the factory. Had this changed in the new labor market? Were the companies still discharging half the workers who re-entered the job market? More generally, had the reasons why the companies discharged workers or why workers resigned changed between the two markets?

First of all, it should be noted that there continued to be some disagreement between workers and management as to the voluntariness of a separation. The number and direction of this disagreement is presented in Table 5.2.

It can be seen that 52 workers or 12.0% disagreed with the management about whether the departure was voluntary. This figure is not too different from the 18.5% disagreement in the old factory sample. There was a slight shift in the direction of the disagreement: in the 1957 factory sample, more workers thought that the company fired them than were recorded as such in company records; in the new factory sample, the percentages were even. As in the earlier study, the rest of the analysis adopts the worker's definition of the voluntariness of the separation.

With this caveat in mind, Table 5.3 presents for each of the new factories the percentage of quits among all separations and, at the end, the mean

TABLE 5.2
Company and Worker Agreement on Reasons for Separation

Agreement	Percent
Company Said Voluntary and Worker Said Voluntary	63.8
Company Said Involuntary and Worker Said Involuntary	24.2
Disagreement	
Company Said Voluntary and Worker Said Involuntary	6.0
Company Said Involuntary and Worker Said Voluntary	6.0
TOTAL	100.0
Number of Workers	434

percentage of quits in both the new and the old samples.

Three general comments can be made on the data in this table. First, the proportion of workers who left at the company's initiative rather than their own declined from 41.9% of the separations from the 1957 factories to 30.2% of the separations from the new factories. Turnover had become predominantly voluntary in the new labor market.

Second, company discharges in the presumed high-demand market had not become insignificant: about a third of the separations were still at the company's choice. Since all of the factories were growing, retrenchment, which accounted for a considerable proportion of the company-instigated separations in the old labor market, no longer played a significant role in turnover. Accordingly, discharges represented a selection process on the part of the company, weeding out unsatisfactory workers rather than closing down whole sections.

Third, there was some variation among the factories in the degree of voluntariness in turnover. The proportion of company-initiated separations

TABLE 5.3
Worker-Defined Quits As a Percent of Separations

Factory	% Quits
Textile Machinery	86.5
Oil Engine	45.9
Drills	100.0
Machine Tools I	55.6
Machine Tools II	45.5
X-Ray Equipment	62.5
Fans	73.9
Scooters	69.8
Electrical Instruments	70.0
Wire	66.7
Diesel Engine	76.2
Compressors	77.5
Cable	81.8
All Factories (New Sample)	69.8
All Factories (Old Sample)	58.1

was considerably higher in four of the factories, where the proportion of involuntary departures was around 50%, about the same as or higher than in the old factory sample. One of these, interestingly enough, was the oil engine factory that appeared in both samples. The others, the two machine tool factories and the equipment factory, were those requiring the highest skill levels and paying the highest wages. Clearly, they were in a position to pick and choose and did so.

A tabulation (Table 5.4) of the principal reasons given for the workers' departure further illuminates the changes in the pattern of turnover. In particular, the principal reasons why companies discharged workers had shifted. In the old market, retrenchment, old age, and sickness were the principal reasons for discharge. In the new market, retrenchment was not a problem and, as will be seen, the workers were so young that old age and sickness played a relatively small role. The reasons for involuntary separation from the new factories were much more directly connected to the worker's actual job preference. This was also true of voluntary departures, in which job-specific reasons for quitting became much more prominent: 36.9% of the workers said that they left because they disliked the job, 23.5% indicated that

they had found a better job, and 18.7% overstayed their leave. In all, including both voluntary and involuntary departures, 87.7% of the separations were for job-related reasons, and the bulk of those were voluntary.

TABLE 5.4
Departure Reasons – All Leavers

Variable	Old Factories	New Factories	χ^2	P
Departure Reasons^a				
Retrenchment	20.3	2.3		
Old Age	15.0	1.4		
Sick	8.8	7.6		
Disliked Job	28.6	36.9		
Quarrel	8.4	3.0		
Overstayed Leave	6.2	18.7		
Misdemeanor	4.0	3.7		
Family	2.2	0.0		
Better Job	4.0	23.5		
No Mobility	15.0	5.5		
Summary of Departure Reasons				
Retrenchment	20.3	2.6		
Old Age and Sick ^b	22.0	9.7		
Voluntary, Job Reasons	42.3	63.1		
Involuntary, Job Reasons ^c	15.4	24.6		
Company Said Voluntary	38.3	69.8		
Worker Said Voluntary	58.1	69.8	8.50	.004
N=	227	434		

^a Multiple responses allowed

^b Worker gave any of the following reasons: disliked job, found better job, no mobility.

^c Company reported quarrel, misdemeanor, overstayed leave.

Discharged Workers Versus Quits

This analysis of the process of turnover turns now from aggregate market changes – the number leaving the old factories, whether they were discharged or quit, the companies' and the workers' reasons for the separations – to the selectivity question of what kind of workers were voluntarily or involuntarily separated. Table 5.5 contains the results of the tabular and regression analyses of involuntary discharge.

The selectivity of who was fired displayed in this table is remarkably similar to the parallel analysis of those leaving the 1957 factories, except that two of the variables that were primary predictors at that time – age and marital status – had now become irrelevant. As will be seen, the average age of the leavers in the new factory sample was so low, and so few of them were married, that these variables no longer discriminated. As for the rest, only a few variables predicted who would be fired, and they were the same in both studies: whether or not the worker had become part of the permanent cadre, and how much education he had – the more education, the less likely he was to be involuntarily discharged. In the new job market, education meant not only general education, but technical education as well. Equally interesting are some of the variables that might have been expected to relate to the likelihood of being discharged, but did not, such as past experience, or more importantly, occupational class and skill level as reflected in wage. Of particular interest is the fact that in the new labor market, metal workers, the occupational group for which the stated demand was highest and the ratio of applicants to hired closest to one, were only slightly – and to a statistically insignificant degree – less likely to be discharged than to quit. The discharge process in the new market seems not to have been related to skill scarcity or hiring patterns any more than in the old market, and it seems to reflect the same pattern of firing the least educated newcomers.

A final note on involuntary leaving: in the analysis of what happened to workers after leaving the jobs in the new factories, it became apparent that the discharged workers made out rather poorly in the marketplace. Fully 79.4% remained unemployed throughout the time of the survey, compared with only 39.6% of the voluntary leavers. If they were rehired, they were much less likely to gain in wages; 40.7% of the involuntary leavers gained, as compared with 76.0% of those who left voluntarily. And in general, they were less likely to prefer the new jobs to the old ones: only 40.7% of the involuntary leavers compared with 82.0% of the voluntary leavers said that they liked the new jobs better. Obviously, having been discharged was a handicap in the new labor market. Such a situation did not seem to obtain

TABLE 5.5
 Predictors of Involuntary Departure, New Factories

	Total Number	Involuntary Percent	LOGIT	OLS
All Leavers	434	30.2	-0.78**	-0.15**
Education				
Up to 7th Standard	97	45.4		
Up to 10th Standard	119	43.1		
Matric	161	16.1		
College	57	14.0		
Technical Education	167	21.6**	-0.33	-0.07
Non-Pune Born	214	25.7	-0.35	-0.07
Age Difference (Years)		-0.04	-0.10	-0.02
Single	285	30.9	0.03	0.01
Brahman	144	25.7	-0.39	-0.002
Maratha	114	34.2		
Intermediate and Harijan Castes	86	31.3	0.13	0.05
Other Castes and Religions	90	31.1	0.05	0.03
First Job	102	31.4	0.05	0.01
Permanent	160	20.6*	-0.11**	-0.19**
Departure Wage			-0.002	-0.0004
Occupation				
Production and Maintenance	330	76.0		
Supervisors	34	7.8	-0.61	-0.08
Clerks	70	16.1	-0.64	-0.02
Metal Worker	236	25.8	-0.06	-0.02
Seniority Less than 1 Year	285	33.0	0.24	0.02

TABLE 5.5 (cont.)

	Total Number	Involuntary Percent	LOGIT	OLS
Non-Marathi Speaker	89	30.3	0.04	0.02
Written Application	284	31.0		
Used Employment Exchange	160	31.3		
Friends and Relatives Helped	98	29.6		
R ²				0.14

quite so clearly in the old factory market, where the reasons for leaving a factory had relatively little to do with what happened to him subsequently in the job market.

Who the Leavers Were

Unfortunately, the next logical step taken in the old market survey – comparing those who left the factory with those who stayed – is not possible in this analysis. Since there is no equivalent of the 1957 survey for the new factories, there is no detailed descriptive information on the general work forces in the new factories with which to compare the subset who left. Hence it is not possible to determine whether what distinguished voluntary from company-initiated departures was the same in the new as in the old market. The best that can be done is to look cross-sectionally at the characteristics of those being separated, comparing them with the equivalent group leaving the 1957 factories, and then turn to what happened to them in the new labor market.

It was noted in the last chapter that the applicant pool and those hired in the new labor market represented a major step upward in social quality compared with either the general work-force or those re-entering the employment market from the old factories. The same held true for those leaving the new factories. Table 5.6 compares the social and family background characteristics of those leaving the 1957 sample of factories and the new factories.

TABLE 5.6
**Comparison of Social and Family Background Characteristics
 in the Old and New Factories**

Variable	Old Factories	New Factories	χ^2	P
Caste				
Brahman	23.3	33.2	37.18	.000
Maratha	29.5	26.3		
Intermediate	15.9	17.3		
Backward	14.1	2.5		
Other	17.2	20.7		
Education				
None	25.6	0.9	137.39	.000
Up to 10th Standard	56.4	48.9		
Matric and Beyond	18.1	50.2		
Birthplace				
Born in Pune	29.1	50.7	27.50	.000
Born Outside Pune	70.9	49.3		
Marital Status				
Never Married	25.6	65.7	94.50	.000
Ever Married	74.4	34.3		
Mean Age	36.10	24.99		
Sex				
Male	94.6	95.4		
Female	5.4	4.6		

Brahmans had risen from roughly a quarter of the sample to a third, and members of the lowest castes had practically disappeared. The educational qualifications of the work force were far superior. There were almost no workers without formal education, and half were matriculates or higher, compared with only one out of five in the old factories. In fact, 57 workers or 13.1% of those leaving the new factories had attended a college or a university, while only 2.6% of those leaving the old factories had gone that far.

In addition to these social quality measures, there was a considerably larger proportion of in-migrants among those leaving the new factories, reflecting in part an increase in the proportion of migrants in the general population of Pune. Two other shifts, however, were not reflected in general population trends. Workers leaving the new factories were overwhelmingly single and on the average 10 years younger than those leaving the old factories. The two samples share in common only a continued paucity of women, around 5% of each sample.

In a similar fashion, the workers re-entering the market from the new factories had a higher level of technical training and experience, but they were much more likely to remain with a company for only a relatively short time and to leave before becoming part of the permanent cadre. Table 5.7 compares the old and the new factory leavers on various aspects of their occupational histories.

Less than one out of four workers leaving the new factories was a fresher when he was hired into the old job. Among those leaving the 1957 factories, the equivalent figure was 38.8%. Moreover, 38.5% of those leaving the new factories had had formal technical training. Not included in this enumeration are apprenticeships, formal or informal, so that this figure represents the proportion who had had technical school training of one kind or another. Such training was relatively uncommon in the older samples: only 4.8% of those leaving, and indeed only 2.9% of the entire work force in those factories had had technical training. The higher skill levels of the workers leaving the new factories was also reflected in their average wage at the time of departure, more than Rs. 30 higher than the mean wage of those leaving the old factories, a greater increase than general inflation would have led us to expect.

The other striking feature of this comparison is the markedly different job status of the departees. Most of those leaving (78.0%) the old factories were permanent workers and had been working in those firms for many years; 85.4% had been employed for more than three years. In comparison, most (63.1%) of those who left the new factories were still in temporary status, and only 9.5% had worked at those jobs for more than three years. In fact, the large majority (65.7%) had been employed for less than a year.

Clearly, then, the workers re-entering the job market from the new factories were very different from those leaving the old factories, and, inferentially, the nature of the turnover process itself had changed. This shift in market processes is even more evident in what happened to the workers after leaving the jobs.

TABLE 5.7
Comparison of Job Status Characteristics
in the Old and New Factories

Variable	% Old Factories	% New Factories	χ^2	P
Occupational Status				
Clerk	8.4	16.1	22.68	.000
Supervisor	18.9	7.8		
Production, Maintenance	72.7	76.0		
Permanence				
Temporary, Badli, Apprentice	22.0	63.1	99.14	.000
Permanent	78.0	36.9		
Seniority				
Up to One Year	7.0	65.7	394.06	.000
Up to Three Years	7.5	24.9		
Up to Eight Years	30.8	7.4		
9 Years or More	54.6	2.1		
Departure Wage (Mean)	Rs.101.32	Rs.132.02		
First Job	38.8	23.5	16.22	.000
Technical Education	4.8	38.5		
N=	227	434		

Unemployment

In view of the youth, greater education, higher incidence of technical training, and higher skill level of the workers leaving the new factories, and in view of the sudden spurt in demand for workers in Pune, it is surprising to find that by the end of the six months during which data were collected in the new factory study, almost half (48.4%) of the leavers remained unemployed. The unemployment rate among workers leaving the older factories was only

18.5%. It is true that re-employment was spread over a seven-year period for the cohort of workers leaving the old factories, compared with a maximum of six months for those leaving the new, but these time periods can be made somewhat more comparable by counting as unemployed in the old factory sample only those who took more than six months to find a new job. By this definition, one out of three (33.5%) of those leaving the old factories would have been counted as unemployed, compared with about half (51.6%) of those leaving new factories. The unemployment rate is still higher among the workers leaving the new factories, and this in a market that was considered *a priori* to have a substantial, if not unfillable demand for labor.

Part of the explanation for this seeming anomaly lies in the higher educational and social class level of the new workers, which cut them off from that cushion of marginal jobs – bidi roller, bone setter, garland maker, coolie – to which many workers leaving the old factories resorted. Beyond that, however, unemployment played a different role in the two labor markets, as seen in the different kinds of people who remained unemployed. In the older factories, the unemployed were discards, often self-initiated, from the job market. They were the sick, the old, and those with little or no education. In the new labor market, these groups were almost entirely missing. Rather the unemployed included a large cadre of workers who had tried factory employment and, either at their own or the company's initiative, abandoned it. Instead of moving into the unorganized sector, they simply dropped out of the labor market entirely.

Predictors of Unemployment

Table 5.8 provides a glimpse of factors differentiating those who remained unemployed from those who got another job.

It will be recalled that in the old factory sample, a single variable, age, was the over-riding determinant of unemployment, while those with no education showed a higher risk of unemployment as well. In the new factories, education still counted, but with a different emphasis: it is not that the completely uneducated dropped out of the labor market; rather an appreciably higher percentage of matriculates and college-trained workers were re-employed. Only 35.5% of those with an education below the matriculate level were re-employed, compared with 61.5% of those at or above that level. In the sample of those who left the new factory, the significant finding is that the upper end of the educational continuum prospered, not that the

TABLE 5.8
Predictors of Re-employment, New Factory Leavers

	Number	Re-employed Percent	LOGIT	OLS
All Leavers	434	48.4		
Education			0.17	0.03
Up to 7th Standard	97	36.1		
Up to 10th Standard	119	34.5		
Matric	161	59.6		
College	57	66.7		
Technical Education	167	59.3**	0.40	0.07
Non-Pune Born	214	52.8	0.22	0.03
Age Difference (Years)		1.1	0.38	0.01
Single	285	47.0	-0.03	-0.03
Brahman	144	57.6**	0.11	0.03
Maratha	114	43.0		
Intermediate and Harijan Castes	86	47.6	-0.13	-0.02
Other Castes and Religions	90	42.2	0.69	0.09
First Job	102	9.8**	-3.05**	-0.47**
Permanent	160	53.8	0.51	0.07
Departure Wage (Mean Difference)		+Rs.41.0**	0.001	0.0003
Occupation				
Production and Maintenance	330			
Supervisors	34	76.5**	0.06	0.001
Clerks	70	71.5**	0.72	0.10
Involuntary Departure	131	20.6		
Voluntary Departure	303	60.4**	2.04**	0.34**

	Number	Re-employed	LOGIT	OLS
		Percent		
Seniority Less than 1 Year	285	45.3	-0.61*	-0.09
Non-Marathi Speaker	89	46.1	-0.60	-0.09
Metal Worker	236	38.4**	-0.45	-0.08
Written Application	284	71.9**	0.38	0.07
Used Employment Exchange	160	36.2	-0.15	-0.03
Friends and Relatives Helped	98	30.0**	-0.85**	-0.13**
R ²				0.38

lower end suffered.

In addition to education, several other variables were related to unemployment in the new factories in the tabular analyses. These included: workers having technical education, Brahman caste, fresher status, departure wage, occupational class – supervisory, clerical, metal working – departure, seniority, written applications, and the assistance of friends and relatives. Not all of these characteristics helped a worker's chances for re-employment – freshers and metal workers were more likely to remain unemployed – but all made a difference in whether or not a factory leaver was likely to remain unemployed. It is also interesting to note that while women comprised too small a sample to show statistically significant results – there were only 20 women in the entire sample – as in the previous study, once they left the factory they tended not to find other jobs. Of the 20 women leaving the new factories, only three were re-employed.

A smaller, but still significant number of variables remained powerful predictors when all others were held constant in the regression analysis. Brahmans lost their advantage, presumably because that advantage lay in superior education rather than caste status. Similarly, the effect of technical education, occupational class, and departure wage disappeared. In both the logit and OLS analyses, freshers and voluntariness of leaving took on overwhelming importance, tending to swamp the others statistically. It was the freshers who left involuntarily that were the core of the unemployed. In fact, only 10 of the 102 freshers in the sample of new factory leavers were re-employed. Indeed, they were so infrequent among those re-employed that this variable had to be dropped from subsequent analyses of the operation of

the re-employment labor market. Once again, a picture emerges of factories hiring workers who had a good deal of general education, but little or no work experience, trying them out, and discarding some of them. Many of these workers essentially dropped out of the job market.

An even more interesting fact is that those who had been metal workers in the factory they were leaving were significantly more likely to remain unemployed, whereas the high demand for metal workers discussed in the last chapter might have led to a greater re-employability of such workers. The explanation for this high dropout rate among ex-metal workers leads back to the discussion about the nature of turnover in the new labor market. In this period of rapid expansion, the process of trial recruitment by the companies was most marked precisely in those jobs where demand was highest and the supply of experienced workers lowest. Indeed, some companies recruited workers directly out of secondary school, from among those who scored highest on the matriculation examination. These new employees were given a brief apprentice training and placed at the lowest level of the metal working trades. The companies then made their selection from the workers who performed best. The others seem not only to have left the individual factory, but also, at least temporarily, to have dropped out of the labor market entirely. Thus as the examination of the applicant pool indicated, general education was substituted for experience and technical training. The unemployed comprised a combination of those who tried factory work and did not like it, and those who may have liked it but whose work the company found unsatisfactory.

Job Search Strategies

In addition to a major shift in the pattern of unemployment, there were some changes in the way in which those workers who were re-employed went about looking for a job.

Table 5.9 compares the old and new job markets as to the proportion of re-employed workers who used one or another strategy in seeking a new job. Two shifts in the process of job search emerge. First, while there was some continued increase in the use of friends and relatives, it was the use of the formal search mechanism that increased most dramatically. About the same proportion of workers had registered with the Employment Exchange, but the Exchange was reported to have helped in finding the next job in one out of five cases, instead of one in 10. Thus its effectiveness had doubled in the

TABLE 5.9
 Comparison of Job Search Strategies
 in the Old and New Factories (Re-employed)

Variable	Old Factories	New Factories	χ^2	P
Employment Exchange				
Registered	35.1	36.2	0.01	.919
Helped	10.2	21.9		
Experience Helped	32.5	61.4	28.36	.000
Used Written Application	44.4	71.9	26.70	.000
Used Friends and Relatives				
Helped	23.2	30.0	2.80	.250
Didn't Help	4.6	6.2		
Answered Ad	23.8	45.7	17.19	.000
N=	185	210		

new market, although it still did not serve as the primary avenue of recruitment. Even more dramatic was the increased use of written applications and of answering advertisements, testimony to both the formalization of the recruitment process on the part of companies and increased literacy on the part of workers.

An even more radical and important shift in the pattern of job search was the great increase in the number of workers who reported that experience in the previous job helped in finding the new one. Only about a third of the workers rehired in the old market, but almost two-thirds of those rehired in the new, reported that a skill transfer helped in the job search. This finding is a reaffirmation of the pattern noted in the applicant pool study: the labor market had become more skill-specific. Workers no longer moved into totally different industrial and occupational domains, nor did they report little skill transfer as they changed employers. This increased skill transfer will be explored more fully below.

Time Between Jobs

Another aspect of turnover that might have been expected to change is the amount of time it took those re-entering the job market to find a new job. If the new labor market was in fact dominated by high demand and a labor shortage, those leaving the new factories should have been re-employed much more quickly than those leaving the 1957 factories. In fact, it might have been anticipated that a more substantial proportion would already have found another job before leaving the previous one. What do the data show?

There was a slight increase in the percentage of workers indicating that they had another job in hand before leaving the old one, from 21.5% in the old market to 26.9% in the new. However, an even greater increase might have been expected. Even in the new market, where demand should have been considerably higher than in the old one, three out of four workers left the old jobs without having arranged for a new one. A similar situation was evident in comparisons of the actual time required to find a new job, whether or not the worker had one lined up at departure. Confining the comparison of the two samples to those who were re-employed, and deleting from the old market sample those who took more than six months to find a job – since the new market would have classified such people as unemployed – the proportion of people who found a job within a month of leaving the old one was 74.8% in the old market sample, and 86.6% in the new. This was a statistically significant increase, but not as great a shift as might have been expected. And if the unemployed are included in the calculation, the proportion of leavers re-employed within a month was actually less in the new market, 41.9% compared with 49.3% in the old. In short, the certainty and speed of re-employment seems not to have increased dramatically.

Localization of the Market

In the analysis of the applicant pool, it was noted that although the majority of potential recruits to the new factory work forces were resident in Pune, a substantial number had migrated to Pune in search of a job. Did the workers leaving the new factories reverse this inward flow and spread out beyond Pune for re-employment, and how did any diffusion from the new factories compare with the equivalent from the 1957 factories? The brief

answer is that the new market was more centripetal, more localized. Relatively few, about one in 10, of those separated from the new factories found the next job outside the Pune metropolitan area. This proportion (9.0%) of out-migrants was considerably lower than the 31.8% of those leaving the 1957 factories who found the next jobs out of Pune. However, in both markets, workers tended to remain within the boundaries of Maharashtra in seeking the next jobs; only nine out of the 185 re-employed among those leaving the 1957 factories moved out of Maharashtra, and only three out of 210 leaving the new factories. In short, while the geographic domain of recruitment had been expanded in the new labor market, the re-employment market had become even more localized.

Factory-to-Factory Re-employment

In the new high-demand labor market with its immense increase in the number of industrial units seeking employees, was there a greater tendency for the workers to remain in the factory sector as they changed jobs? In the old labor market, most workers (58.4%) who left a factory job moved into non-factory employment in the next job. In the new labor market, the proportion of those moving out of the factory sector had dropped to 41.0%. Thus while the factory work-force in the new labor market tended to be more committed to the factory, there was still a substantial amount of movement in and out of the factory sector. Even with this market's relatively high demand for workers with industrial skills, the creation of a committed industrial proletariat seems to have been incomplete.

Who Remained in the Factory Sector?

Was there also a change in selectivity? Did the two markets differ in what kind of workers would stay in or move out of the factory sector? Table 5.10 provides the tabular, logit, and OLS predictors of re-employment in a factory.

TABLE 5.10
Predictors of Re-employment in Factory, New Factories

	Total Number	Percent in Factory	LOGIT	OLS
All Re-employed	210	59.0		
Education			0.04	0.01
Up to 7th Standard	35	54.3		
Up to 10th Standard	41	63.4		
Matric	96	51.3		
College	38	63.2		
Technical Education	99	60.6	0.33	0.06
Non-Pune Born	113	61.1	0.05	0.01
Age Difference (Years)		-0.51*	-0.51*	-0.09*
Single	134	56.0	-0.76	-0.16
Brahman	83	60.2	0.55	0.13
Maratha	49	51.0		
Intermediate and Harijan Castes	40	67.5	1.00	0.19
Other Castes and Religions	38	57.9	-0.53	-0.12
Non-Marathi Speaker	41	56.1	-0.03	-0.01
Permanent	86	62.8	0.27	0.04
Departure Wage (Difference in Rs.)		+Rs.42.94**	0.01**	0.001*
Occupation				
Production and Maintenance	134	58.9		
Supervisors	26	80.8*	0.24	0.08
Clerks	50	48.0*	-0.05	-0.09
Voluntary Departure	183	60.1	0.19	0.04
Seniority Less than 1 Year	129	55.0	0.50	0.09

TABLE 5.10 (cont.)

	Total Number	Percent in Factory	LOGIT	OLS
Metal Worker	76	68.4*	1.15**	0.22**
Written Application	151	66.9**	1.28**	0.27**
Used Employment Exchange	76	46.1**	-0.82**	-0.17**
Friends and Relatives Helped	63	65.1	0.09	0.01
R ²				0.24

In the new market as in the old, how the worker went about looking for a new job made a great deal of difference in whether he wound up in another factory job or not. In both studies, those who had filed written applications had a much greater likelihood of re-employment in a factory. Or perhaps it should be put the other way: factory employment required the filing of a written application, a requirement less common for other types of employment. In the new market, registration with the Employment Exchange made it more, not less, likely that the next job would be out of the factory sector – curious finding – and this was so for both the tabular and the regression analyses; in the old labor market, there was no such effect. While the formal mechanisms of job search retained or even enhanced their importance in the new job market, the availability of a network of kin and relatives was also important to remaining in the factory sector.

Aside from the strategies employed in the job search, there were only two other variables which predicted factory re-employment in the new job market when all else was held constant. Both reflected whether the worker had marketable industrial skills. The first of these was wage level: the higher the wage in the last job, the more likely it was that the worker would be rehired into another factory. The second was even more closely related to marketable industrial skills: the metal workers, whose skills, it has been noted, were in demand in the market at that time, were considerably more likely to remain in the factory sector. Aside from the job search strategies and the skill of the worker, only age among the personal characteristics was an important predictor of remaining in the factory sector – the younger the worker, the more likely he was to be rehired into a factory – but the difference in age between those who did and did not go from factory to factory was only half a year. In the old market, Brahmans, unmarried workers, and those who had left voluntarily were more likely to remain in the factory sector than

others, but these variables played no role in the new labor market.

To summarize, in the old market, social characteristics made a difference in whether the worker remained in or moved out of the factory sector, while in the new labor market, the decisive elements were job search strategies and skill level. And this brings the discussion directly to the role of skill transfer in the new job market.

Comparing Jobs

Like the survey of those leaving the 1957 factories, this study compared in four respects the job the worker left behind with the job he transferred into. One of these has already been discussed, whether or not the worker moved out of Pune in the course of the job change. The other three are (1) the amount of skill transfer that accompanied the job shift, (2) gain or loss in wages, and (3) whether the worker liked the new job better than the old one, and in what respects. The first of these has to do with the mechanics of the market and, from the perspective of the market, it is a rather neutral comparison; a lack of skill transfer is presumably a loss to an employer or the economy, but may or may not be reflected in whether a worker thinks he has improved himself with a job change. The latter two comparisons, relative wages and job satisfaction, are more pertinent to the question of whether job changes are a means of upward mobility.

Skill Transfer

As noted earlier, the survey of the applicant pool indicated that there was much more skill transfer in the new market than in the old. The same finding emerged from workers' reports of the greater relevance of old skills to the job search in the new market. Is there other evidence of skill carryover? As in the earlier study, there are two measures of skill transfer, one objective and one subjective. An objective view of skill transfer in the two markets can be provided by similarities between the Standard Occupational Classifications of the job left and the job newly acquired. Once again, the greater the number of digits matched in the numerical occupational codes, reading from left to right, the greater the similarity between the occupations. The subjective view

of skill transfer is taken from the worker's response to a question as to whether he thought he used any old skills in the new job. The same two basic types of questions will be addressed: first, had the amount of skill transfer changed between the two markets, and second, had there been any change in the worker characteristics that predicted skill transfer? Table 5.11 answers the first of these questions.

TABLE 5.11
Comparison of Similarity of SOC in Job Exchanges
in Old and New Factories

Differences	Old Market		New Market	
	Number	%	Number	%
All Digits Same	45	24.3	81	38.6
Only in Last Digit(s)	7	3.8	8	3.9
In Second Digit	22	11.9	17	8.1
In First Digit	<u>111</u>	60.0	<u>104</u>	49.5
TOTAL	185		210	

It can be seen from Table 5.11 that about half the workers in the new market changed occupation to the extent that they shifted from one broad – the first digit level – occupational class to another. This still represented a substantial amount of occupational change. It is also true, however, that 10 percent fewer workers in the new market made such a radical occupational shift than in the old market. Moreover, the percentage who remained in exactly the same occupation was now 38.6%, up 14.3% from the old market. The same picture of greater skill transfer in the new market emerges from responses to a question appearing in both surveys about the use of old skills in the next job. In the survey of the old market, only 31.9% of the workers reported such a skill carryover, and in the new job market, 41.9%. Generally, then, there was more skill transfer in the new market, but a surprising amount of occupational shifting was still in progress.

What about the selectivity question of who transferred skills and who did not? Had this pattern changed as well? Table 5.12 presents the predictors of skill carryover.

TABLE 5.12
Predictors of Skill Transfer, New Factories

	Total Number	Percent	LOGIT	OLS
All Re-employed	210	61.9		
Education			0.25	0.04
Up to 7th Standard	35	45.7*		
Up to 10th Standard	41	65.9		
Matric	96	63.5		
College	38	68.4		
Technical Education	130	72.7**	0.67**	0.15**
Non-Pune Born	113	64.6	0.03	0.001
Age Difference (Years)		-0.42	-0.37	-0.04
Single	134	60.4	-0.26	-0.08
Brahman	83	68.7	0.26	0.06
Maratha	49	55.1		
Intermediate and Harijan Castes	40	60.0	-0.29	-0.06
Other Castes and Religions	38	57.9	-0.04	-0.05
Non-Marathi Speaker	41	51.2	-0.52	-0.13
Permanent	86	67.4	0.22	0.02
Departure Wage (Difference in Rs.)		+Rs.60.04**	0.02**	0.001**
Occupation				
Production and Maintenance Supervisor	134	55.2		
Clerk	26	88.5**	0.58	0.06
	50	66.0	0.37	0.11
Voluntary Departure	183	63.9	0.25	0.05
Seniority Less than 1 Year	129	58.1	-0.32	-0.05

TABLE 5.12 (cont.)

	Total Number	Percent	LOGIT	OLS
Metal Worker	76	63.2	0.64	0.13
Written Application	151	68.9**	0.87**	0.22*
Used Employment Exchange	76	61.8	0.39	-0.73
Friends and Relatives Helped	63	61.9	0.13	0.01
R ²				0.21

Among the workers leaving the 1957 factories, several social status characteristics – caste, general education, migrant status – acted as predictors of skill transfer. In the new job market, they did not. As in the determination of who remained in or left the factory sector, the predictors of skill transfer in the new market became skill-related – in this case, wage level and job search procedures. The more highly skilled workers were finding a market for their skills in other factories, and they did so by filing one or more written applications. This combination of formal job search strategies and skill transfer had not yet emerged in the old market.

Wage Changes

Turning to another of the job comparisons, it was an even bet in the old job market as to whether a worker would gain or lose money in the job transfer. In the new market, the odds were much more in his favor: 72.9% of the re-employed workers made more money in the new jobs than in the ones they had left. Job mobility had become an economically more rational enterprise.

This same note of rationality emerges in Table 5.13 which indicates who gained and who did not in the job exchange. The poorly educated – the group, incidentally, that would have been more at home in most of the 1957 factories – had about the same 50-50 chances of gaining in wages as in the old market. The technically educated in the new market were significantly more likely to gain in wages, as were those who left the old jobs voluntarily. Workers at different wage levels also had different chances of gaining in the transfer, but perhaps the most surprising result is that the workers who found

TABLE 5.13
Predictors of Wage Gain, New Factories

	Total Number	Percent	LOGIT	OLS
All Re-employed	210	72.9		
Education			0.07	0.16
Up to 7th Standard	35	54.3**		
Up to 10th Standard	41	73.2		
Matric	96	81.3		
College	38	68.4		
Technical Education	99	80.8*	0.86*	0.13*
Non-Pune Born	113	71.7	-0.07	-0.02
Age Difference (Years)		-1.92	-0.12	-0.02
Single	134	78.4	0.03	0.001
Brahman	83	77.1	0.50	0.07
Maratha	49	69.4		
Intermediate and Harijan Castes	40	67.5	-0.96	-0.02
Other Castes and Religions	38	73.7	0.54	0.07
Non-Marathi Speaker	41	78.0	1.29*	0.16
Permanent	86	73.0	0.25	0.04
Departure Wage (Difference in Rs.)		-Rs.29.01*	-0.01**	-0.001**
Occupation				
Production and Maintenance	134	70.1		
Supervisor	26	73.1	1.21	0.18
Clerk	50	80.0	0.89	0.14
Left Voluntarily	183	77.6*	1.68**	0.32**
Seniority Less than 1 Year	129	72.1	-0.77	-0.12

TABLE 5.13 (cont.)

	Total Number	Percent	LOGIT	OLS
Metal Worker	76	75.0	0.64	0.11
Written Application	151	75.5	0.27	0.06
Used Employment Exchange	76	84.2*	0.99**	.014**
Friends and Relatives Helped	63	74.6	0.20	0.04
R²				0.21

new jobs through the Employment Exchange were the most likely of all to win a wage increase. What exactly this means is not clear.

Comparative Job Satisfaction

Turning now to the final comparison of the new with the former jobs, were the workers in the new market more satisfied with the new jobs than with the old ones, and did more of them think that they had improved themselves? The answer to the latter question is yes, both overall and with respect to each feature of job satisfaction.

Overall, 76.6% of the workers in the new job market thought that the new job was better than the old one, compared with 63.0% in the old market. Even more telling, only 9.5% of those re-employed in the new labor market said that they would have taken the old job back if it were offered, while 47.3% of the workers in the old factories indicated they would have done so.

To investigate worker attitudes toward specific aspects of the job, once again he was asked to rate the two jobs on a number of items. The workers' responses on each of these items in the old and the new market surveys are presented in Table 5.14. It can be seen that in every item relating to the objective conditions of the job — chance for advancement, job security, pay, pleasantness of the work performed, hours, and residential propinquity — the workers in the new market were more likely than those in the old to prefer the new to the former job. In items having to do with the worker's relations with the management or fellow workers, the shift was less dramatic.

TABLE 5.14
 Comparison of Subjective Outcomes for Re-employed
 in the Old and New Factories

Variable	% Old Factories	% New Factories	χ^2	P
Take Old Job Back			97.97	.000
No	52.7	62.4		
Contingencies		28.1		
Yes	47.3	9.5		
Current-Old Job Comparison			37.80	.000
Old Job Better	34.2	11.9		
Same, Don't Know	2.7	11.4		
Current Job Better	63.0	76.7		
Opportunity for Advancement			25.82	.000
Old Job Better	36.3	16.2		
Same, Don't Know	12.3	16.7		
Current Job Better	51.4	67.1		
Job Security			7.93	.047
Old Job Better	19.2	16.2		
Same, Don't Know	33.6	31.9		
Current Job Better	47.3	51.9		
Pay			161.94	.000
Old Job Better	19.2	16.2		
Same, Don't Know	63.7	6.2		
Current Job Better	17.1	77.6		
Relationship with Immediate Supervisors			21.51	.000
Old Job Better	20.5	7.1		
Same, Don't Know	66.4	80.5		
Current Job Better	13.0	12.4		

Variable	% Old Factories	% New Factories	χ^2	P
Relationship with Top Management			9.78	.021
Old Job Better	13.0	8.6		
Same, Don't Know	73.3	80.5		
Current Job Better	13.7	11.0		
Relationship with Other Workers Equal to You			24.11	.000
Old Job Better	16.4	6.7		
Same, Don't Know	70.5	88.1		
Current Job Better	13.0	5.2		
Relationship with Inferiors			185.28	.000
Old Job Better	33.8	4.8		
Same, Don't Know	13.2	85.2		
Current Job Better	49.7	10.0		
Pleasantness of Actual Work			28.58	.000
Old Job Better	28.8	12.4		
Same, Don't Know	31.5	25.2		
Current Job Better	29.7	62.4		
Hours of Work			21.27	.000
Old Job Better	31.5	15.2		
Same, Don't Know	34.9	48.6		
Current Job Better	33.6	36.2		
Nearness to Residence			10.01	.019
Old Job Better	28.1	20.5		
Same, Don't Know	15.1	18.6		
Current Job Better	56.8	61.0		
N	146	210		

but on all such variables, the proportion of workers preferring the former job was smaller in the new sample than in the old.

Once again, a factor analysis highlighted and organized the differences between the individual items. As in the old market study, the responses of the workers in the new market study clustered on two neat factors identical to those observed in the first study. Workers do seem to have distinguished between interpersonal and situational aspects of job satisfaction. The factors and their loadings are given in Table 5.15.

TABLE 5.15
Rotated Factor Loadings, Job Comparison
Items, New Factories

	Factor I Interpersonal	Factor II Situational
Chance for Advancement	0.14	0.83
Job Security	-0.03	0.76
Pleasant Work	0.09	0.69
Relationship with Management	0.86	0.02
Relationship with Supervisors	0.87	0.08
Relationship with Peers	0.78	0.10

Using these loadings on the separate factors, to compute the factor scores, the selectivity question can now be asked. What kind of worker felt that he had improved himself in interpersonal or situational aspects of the job? Table 5.16 presents the OLS coefficients measuring for each of the variables, the extent to which it predicted reports of higher satisfaction with the new job on each aspect of the comparison, with the effect of all of the other variables held constant.

It can be seen from this table that few of the variables were strong predictors in their own right of one or another aspect of job satisfaction, although altogether these variables collectively predict reasonably well. In terms of individual variables, it can be seen that those workers who had been

TABLE 5.16
**Predictors of Job Comparison Factor Scores
 (Ordinary Least Squares Coefficients)**

	Factor I Interpersonal	Factor II Situational
General Education	-0.06	0.05
Technical Education	-0.27	0.19
Non-Pune Born	-0.01	0.17
Age	-0.06	0.0003
Single	0.27	-0.40*
Brahman	0.13	0.004
Intermediate and Harijan Castes	0.23	-0.06
Other Castes and Religions	0.60*	-0.14
Non-Marathi Speakers	0.36	0.29
Permanent	0.02	-0.30*
Departure Wage	0.0002	0.001
Supervisors	-0.28	-0.28
Clerks	-0.24	-0.18
Left Voluntarily	0.35	0.87**
Seniority Less Than One Year	0.18	0.25
Metal Workers	-0.22	-0.08
Written Application	-0.02	-0.15
Used Employment Exchange	-0.10	0.21
Friends and Relatives Helped	0.21	-0.18
R ²	0.09	0.26

part of the permanent cadre in the last job and those who had left voluntarily liked the situational aspects of the new job better. Little else specific can be said.

This overall impression of indeterminacy possibly results from the absence in the new market study of the old study's most important determinant of relative job satisfaction, the degree of the worker's satisfaction with the old job compared with other workers in that factory. In the old market survey, workers who were relatively happy in the old factory were also happy in the new one, a kind of transference of loyalty that seems to have occurred almost independent of any of the objective characteristics of the workers. Unfortunately, no similar measure of how the workers in the new market felt about the old jobs is available, so there are no parallel attitudinal data in which to seek predictors of enhanced job satisfaction in the new market study. Without this, it can only be said that the determinants of why workers felt that they improved themselves in one or another respect lie mainly outside the data.

Interrelationships Among Job Exchange Features

This chapter on workers leaving the new factories ends with the same question addressed in the old market survey: were the seemingly separate aspects of comparison between the former and the new job related to each other? If a worker stayed within the factory sector, was he more likely to report a skill transfer, gain wages, or indicate that he liked the new job better? Table 5.17 contains the simple correlation coefficients among these different aspects of the job comparisons.

Since three of the items in this comparison are dichotomous, correlation coefficients are somewhat unreliable measures of the relations among these aspects of the job exchange. But to the extent that they indicate the gross magnitudes of those relationships, the various aspects have surprisingly low correlations among them, even less than those found in the study of the old labor market. In the new labor market, then, individual job exchange features could vary independently of each other to a greater extent than in the old labor market.

Despite the generally low correlations, however, one variable can be identified as the one most highly connected with each of the other features of the job change, and that variable is skill transfer. This finding is an appropriate end to the discussion of workers leaving the new factories, dramatizing as it

does the enhanced role of skill transfer in the new job market.

TABLE 5.17
Correlations Among Job Outcome Variables

	Gained Wages	Re-employed in Factory	Skill Transfer	Factor I Interpersonal
Re-employed in Factory	0.05			
Skill Transfer	0.20	0.19		
Factor I Interpersonal	0.06	0.11	-0.11	
Factor II Situational	0.18	0.05	0.14	0.02

Summary

1. Turnover in the new Pune labor market was higher than in the old one, but still below that in the equivalent industrial groups elsewhere in India.

2. Separations were more likely to be voluntary, and the reasons for departure, both voluntary and involuntary, were generally job-related rather than reflecting various personal characteristics of the worker.

3. The pattern of selectivity between voluntary and involuntary leavers resembled that in the old labor market: it was the less educated newcomers who left at the company's initiative.

4. Like the applicant pool, those leaving the new factories were drawn from a much higher social level in Pune.

5. A large percentage of the leavers remained unemployed. Unlike the equivalent group in the old labor market, they were not the sick, the old, and the uneducated. Rather they withdrew from the labor force because either they did not like the work or the company did not like their performance.

6. The use of formal methods of job search had increased, although the help of friends and relatives was still important in finding a job.

7. The time spent seeking a job had decreased somewhat, but as in the old market, relatively few of the workers already had a new job lined up before leaving the old one.

8. A larger proportion of the workers remained in the factory sector in the next jobs, but 41% still moved into non-factory employment.

9. There was much more skill transfer in the new labor market, but one-third of the workers still reported no skill carry-over from the old to the new job.

10. Wage gains in the job transfer were much more likely, and technical education, wage level, and means of job search were all related to the likelihood of the worker's increasing his wages in the next job.

11. There was a surprisingly low correlation among the different aspects of the job change, although skill transfer was the characteristic most related to the others.

Chapter VI

Summary and Conclusions

After presenting such a large and complex corpus of descriptive data, it is useful to pull it all together, summarizing and highlighting the principal findings. Again, the same two-fold pattern of analysis employed throughout the various studies will be used: first, a discussion of the aggregate difference between the old and the new labor markets, and second, a review of the various selectivity questions regarding what kinds of workers did what. In the preceding chapters, the selectivity sections were organized around the dependent variables, the behavior that was being predicted – leaving the factory, gaining wages, transferring skills, getting hired. Here, on the other hand, these questions will be organized around single or clusters of independent variables, the factors predicting behavior – what difference caste or education made in what aspects of the market, what the role of attitudes or occupation was. As befits an exploratory case study, the end will outline a few questions for further research which these data raise. Some of these topics are India-specific, things it would be useful or interesting to know about labor markets in India; others relate to turnover and hiring processes more generally.

The Old and the New Market Compared

This book has referred throughout to an old and a new market. This usage was justified by differences in operation and in the pool of workers involved. In spite of the immense increase in the demand for labor occasioned by the arrival of some 80 new large-scale factories, all paying wages well above those paid in the old factories, the new demand did not result in a noticeable increase in turnover rates in the old factories. Moreover, with rare exceptions, none of the workers was drawn from one set of factories into the other for re-employment. With regard to turnover, what is referred to as the old market is probably typical of most traditional industrial settings in India with the possible exception of the largest metropolitan industrial complexes and the higher-technology sector.

The new labor market, by contrast, is more typical of this large, metro

politan, high-technology sector, although it is distorted somewhat by the suddenness and scale of the industrial transformation. Whether in the long run the new pattern will durably supplant the old one, or whether the traditional pattern will re-emerge as the dominant labor market style remains to be seen.

Listed below are some of the major differences between the two labor markets as they became clear in this study. Both samples of leavers are used, as well as the sample of applicants and those hired.

1. The labor force in the old factories was quite stable, and turnover rates were quite low. The number of workers available for replacement was so great that the companies were able to retain at any time a corps of temporary workers as a buffer against short-run expansion and contraction in the labor force, ranging from 15 to 20 percent of the normal complement of workers. These workers remained in the limbo of temporary status often for years on end. For the others, once they gained a permanent job, they held on to it: average seniority was quite high.

While there is some structural evidence — such as the bonded internship program — of a high-demand, scarce-supply labor market, the actual ratios of applicants to stated demand and hirings do not support this thesis. This is true even for metal workers, supposedly in extremely short supply. The evidence indicates that the applicant pool had expanded to meet the demand. In part this was a result of the prior expansion of the educated manpower pool in Pune, and the tendency of the factories to substitute high general and/or technical education for job experience. Many other characteristics of the new market indicated no overwhelming labor shortage.

2. There was a shift between the two labor markets in the degree of voluntariness of the departures. Of those leaving the old factories, a much higher proportion left at the company's initiative. In the new labor market, more of the separations were voluntary. At the same time, the specific reasons for separation changed. Involuntary leavers from the old factories tended to be dismissed because of retrenchment, a reduction in the factory work-force as a whole, or because they were old or sick. Voluntary leavers tended to leave for personal or idiosyncratic reasons having little to do with the actual work. In the new market, the aged were no longer in the marketplace, there was no retrenchment, and both the company and the workers initiated separations for reasons largely having to do with the work itself. In fact, many of the separations came after a short trial period which left either the company or the worker dissatisfied.

3. In both markets, workers seem to have left the job before finding another one. Indeed, in the old market, the evidence suggests that neither what the worker was doing in the old factory nor the decision to leave had

very much to do with how well he expected to do in his next job. Nor in fact did these factors have much to do with what he actually wound up doing in the next job.

In the new market, there was some diminution in the time spent seeking a new job, but not so great as might have been expected. In both markets, most workers found new jobs, if at all, within a month of leaving the old one. The use of formal mechanisms of job search — written applications, answering advertisements, registering with the Employment Exchange — increased in the new market, but the use of kin and friends remained strong in both markets.

4. The causes and functions of unemployment in the two markets were radically different. In the old market, a very small proportion of the workers remained unemployed, and most did not even try to find a new job. By and large, they were the old, the sick, and those with neither general education nor industrial skills. Oddly, a considerably higher proportion of the workers in the new market remained unemployed, even after the time lapse in the two studies was equalized. There were very few old and sick in the new market, and almost no workers at all with no education. Rather the unemployed were workers whom the company had rejected after a brief trial period, or who had themselves decided that they did not like factory work after such a trial period. In the long run, their departure from the labor market was more likely to be temporary.

5. A much larger proportion of those re-employed in the old labor market moved out of the factory sector in the next job. About half had been engaged in non-factory employment before they were hired for the 1957 jobs, and about half moved into non-factory jobs in the next employment. A small proportion went into agriculture, and for those who did, a job in agriculture was just one step above being unemployed. They had the same social traits as the unemployed — the old, the sick, the uneducated — and overwhelmingly they said that they preferred factory work and would return to it if given a chance. Most of those not employed in agriculture, but who worked for an enterprise other than a factory, dispersed through that host of unskilled fringe occupations in the unorganized sector — hawkers, coolies, peons, shop assistants, road workers, piece rate handicraftsmen, and so on — that comprise such a large part of the urban labor force in India.

In the new labor market, fewer of the re-employed left the factory sector. In part, this was because there were more factory jobs available. An additional factor, however, was the fact that their higher class and educational levels made it impossible for them to get or accept jobs in the unorganized, unskilled sector of Pune's economy. While one group of job leavers in the old market found re-employment in this unorganized sector, the comparable group in

the new market remained unemployed.

6. There was relatively little residential mobility between jobs in either market. Workers tended not to move closer to their work or to choose work that was closer to their residence. The old labor market sent more workers out of Pune in search of the next job; workers in the new market tended to stay within Pune. The new market did, however, extend the zone of recruitment. More migrants – both defined in terms of those born outside Pune and in terms of recent migrants in search of a job – were found among the applicants to the new factories than among the workers in the old market. The new market had developed a centripetal force, drawing workers into Pune but not sending them out.

7. The greatest shift in market processes was the increased relevance of old job skills. In the old factories, relatively few workers reported that they utilized skills learned in the old jobs in either securing or performing the new jobs. The tendency was to change occupation completely upon changing employers. In the new market, it was more common to remain within the same occupation. This tendency toward occupational specificity of the market showed up in the inheritance of occupations across generations, in the occupational similarity of old and new jobs among job changers, and in the proposed and actual occupational carryover among the applicants for jobs and those hired in the new labor market.

8. Job changers leaving the new factories were much more likely to improve their wages in the exchange. For workers leaving the old factories, the chances of a wage increase were about even. Oddly enough, this was also true of the workers being hired by the new factories, most of whom did not get an initial wage increase. It can only be concluded that the role of the pursuit of higher wages in job turnover is as yet unclear.

9. Job changers in the new market were much more likely to like the new jobs better. In both studies, workers' comparisons of the old and new jobs differentiated between objective characteristics of the jobs themselves and aspects having to do with interpersonal relations. It was the former type of comparison that showed great improvement in the new job market, while the latter remained about the same.

Selectivity

The discussion turns now to the effects of various independent variables in predicting one or another type of market behavior or status. The data are

drawn from all three studies: workers leaving the old factories, those applying to and hired by the new factories, and those leaving the new factories. The variables to be predicted vary a little from one study to another, but a common core of market behavior variables is measured in each study.

The behaviors and statuses to be predicted in the study of those leaving jobs in the old factories were separation, voluntary or involuntary unemployment; length of the job search; locale of the next job, in or out of Pune; re-employment in or out of the factory sector; carryover of old skills into the new job; extent of wage increase; and enhancement of job satisfaction, in terms of both interpersonal relations and objective job features. The same set of behaviors and statuses was to be predicted in the study of workers leaving the new factories, except that there were no data available comparing those who stayed in the factory with those who left. In the study of the applicant pool, the behaviors and statuses to be predicted included employment as a fresher, migration in search of a job, occupational class of the job applied for; and among those hired, extent of skill transfer and wage increase, and length of the search.

The predictor variables that are found in all the studies in greater or lesser detail fall into a number of broad classes: social background and family characteristics, work experience, previous occupational characteristics, strategies employed in the job search, and various attitudinal measures. The selectivity sections of each study were concerned with exploring the relations between the independent or predictor variables and the various market behaviors and statuses. When a relation was found only when the analysis proceeded with each variable taken one at a time and without controlling for the others, the symbol (S) for single variables will be attached to the independent variable's name. When the relation was strong enough to appear in the regression analyses when all other variables were held constant, the symbol (R) for regression will be used. A powerful variable would be an independent variable that predicted a large number of market behaviors and statuses, and not only did so in the analysis showing the effect on each individual variable, but also showed a strong effect even when all other variables were held constant.

This section will take up the various classes of independent variables, and what they did and did not predict. As noted earlier, the latter is as important as the former. Much of the literature on Indian social structure takes a single variable, such as caste or type of family, and argues for the social importance of that variable by describing situations or occasions in which its effects display themselves. However, one of the major findings of our studies is that even the most powerful variables had little significant influence and then only in limited domains. Moreover, very few presumably powerful

variables really emerged as strong predictors. This means that each market behavior or status had so many determinants impinging on it that very few predictor variables had an outstanding independent influence. Third, those variables that students of Indian society expect to have a strong influence on almost any form of behavior do not seem to have operated very distinctly in the factory labor market. It will be seen that the effect of family organization and resources was one of these variables, and age and seniority were others.

One other preliminary comment should be made. The workers in the old labor market differed significantly on almost all variables, both independent and dependent, from those, applicants as well as leavers, in the new. The workers in the new market were drawn from higher status groups; were more educated, younger, and more often single; had migrated to Pune rather than having been born there; were more likely to have been previously employed; were more often white collar workers; left voluntarily; had less job seniority; and were more likely still to be in temporary status. In the job exchanges, more gained in wages, remained in the factory sector, transferred skills, and liked the new jobs better than the old ones. The relationships to be discussed below, however, occur within each study, and therefore do not present a cross-sectional view of the market situation with all studies combined.

Caste

In spite of the prominence normally given to caste as an explanatory variable in studies on Indian society, in and of itself, caste played a rather weak role in predicting behavior in either the old market or the new. Anticipating a much stronger effect, the analysis was begun with a rather full breakdown of broad caste groups: Brahmans, Marathas, Intermediate Castes, Village Artisans, Village Servants, Backward Tribes, Backward Castes, Non-Hindu Religious Groups, and Peoples from Outside of Maharashtra. Except for the last two groups which comprise peoples outside the Maharashtrian caste organization, these groups are listed in roughly the order of their position in the caste hierarchy.

It turned out that these manifold divisions correlated with almost nothing throughout the studies. However, to make sure that caste continued to be represented in the analysis, even when its predictive ability was known to be slight, the two groups at the extremes of the hierarchy — Brahmans and Harijans — were included in each selectivity analysis. Where there was a more detailed analysis, each of these groups was compared with the Marathas, the numerically and now socially dominant caste in Maharashtra. There were so few Harijans in the new labor market that only the question of

whether or not Brahmans fared differently from other castes could be included. It should be remembered, however, that the finer caste distinctions dropped in the data reduction process had even less of a predictive effect than being a Brahman or a Harijan.

In general, it can be said that caste differences were reflected, particularly in the new market in the placement of a worker in one or another of the broad occupational classes. Among the applicants, Brahmans were more likely to be white collar than blue collar workers (R), and skilled and semi-skilled than unskilled workers (S). In addition, in two of the broad occupational groups clerical applicants (R) and those applying for skilled or semi-skilled jobs (R) — being a Brahman was a comparative advantage in being hired.

Conversely, the Harijans were almost totally absent from the white collar classes (S), and comprised the unskilled rather than the skilled workers (S). As unskilled workers, they were less likely in a job change to report a skill transfer (R) or to gain in wages (S), and it took longer for them to be re-employed (R).

These broad occupational effects, however, practically exhaust the predictive consequences of caste, either in the tabular analyses or in the regressions. The effect of caste was particularly weak in predicting differences in labor market behavior. With the few exceptions noted above, caste made little or no difference in such job market behaviors as job search strategies and locale, moving in or out of the factory sector, chances for re-employment, skill transfer, gaining in wages, or increasing job satisfaction.

Education

In contrast, education was a relatively powerful predictor. The categories of general education used in the analysis had to be altered somewhat in studies of the different markets. In the old market, there were so few workers with college training, and in the new market so few with no education, that these categories usually had to be combined with the next lower or higher class respectively, in order to allow for any significant testing of predictive power. Throughout the analyses, however, it is possible to contrast the effects of different levels of general education. Similarly, only in the new market did very many workers have some formal technical education. Hence technical education appears as a predictor variable largely in the studies dealing with the new market.

These minor variations, however, do not mask the principle that a worker's general level of education played a very powerful role in distinguishing both occupational status and labor market behavior. In the old market

workers with no education were the unskilled (R), and were more likely to leave involuntarily (S); tended to remain unemployed (S) or to leave the factory sector (S) when they re-entered the job market; tended to lose wages (S) in the job exchange and had no skills to transfer (S). Matriculates, on the other hand, were in the white rather than the blue collar class (R) in the new labor market, and left voluntarily (S), transferred skills (S), and gained wages (R) in the job exchange. The freshers among the applicants to the new factories were more likely to be matriculates (R). The same general picture of favorable occupational status and treatment in the job market emerges when the higher levels of education are tapped, those workers who had had some college education (S). In addition, the ability to speak and read English (R), relatively rare in the old market, became a common skill for most workers in the new market, and was a distinct advantage in the marketplace. Workers with technical education also displayed the same advantages; they left voluntarily (S); often came to the applicant process without job experience (R) and were hired nonetheless (R); were white rather than blue collar workers (S); within the white collar category, were technical and administrative workers rather than clerks (R); and were skilled rather than unskilled workers (R) within the blue collar class.

Migration History

A number of variables have to do with the worker's past geographic mobility. The most general migration data relate to whether or not the worker had been born in Pune, and in the main they show that native sons did not fare very differently from the immigrants. There were a few differences. More fresher applicants (S) were drawn from among Pune natives; the white collar workers (S) were more likely to have been born outside; and among the clerks, those born in Pune (R) were more likely to be hired. The effect of rural origins was no greater. The village-born and those who had previously worked on a farm were more likely to have migrated to Pune specifically in search of a job (S). Surprisingly, these rural migrants were more likely to be applying for white collar jobs (S); but if they applied for clerical jobs, they were less likely to get them (S). Those who did apply for blue collar jobs tended to apply for unskilled work (S). By and large, however, neither migrant status nor rural origins made much difference in the job market; the move seems to have been too distant in the employee's past to matter. And the fact that a worker had migrated specifically for a job had no bearing on his performance in the job market; it was reflected in none of the different market behaviors or statuses.

Age

Age is another social variable that in Indian society tends to be correlated with a great many differences in social status and behavior. Nevertheless, while the workers in the new market were considerably younger than those in the old, within each market the predictive effects of age were neither numerous nor strong. Younger workers in the new market were more likely to leave the factory sector (R) while among the leavers in the old market, the only substantial effect of age was that the young were somewhat less likely to gain in wages in the job exchange (S). Age differences played a somewhat more important role among the applicants. The freshers had a lower average age (R) than applicants with some job experience, as did white collar compared with blue collar workers (R). These two relationships combined illustrate the effect of the recent increase in the pool of educated manpower in Pune discussed in Chapter III.

Sex

Another supposedly strong variable in Indian society is sex. Unfortunately, women were numerically so under-represented in either the new or the old markets that this variable could not be included in any tabulations where the statistical significance of a relationship was to be measured. Ignoring statistical measures for a minute, however, it appears that women who left factories tended to do so involuntarily, and to have difficulty landing another job when they did find themselves out of work. However, the data can shed little other light on important aspects of women's roles in the factory labor market.

Family Characteristics

One of the most interesting sets of predictor variables — the set which following most of the literature on Indian society, might have been expected *a priori* to have very substantial effects on labor market behavior — was size of the worker's family, his position in it, and the extent of the family's financial resources. The social importance of these variables would presumably have showed up quite clearly in predicting which workers could afford to or would be impelled to make a job change. Because of the exploratory nature of the 1957 baseline survey, a good deal of data on the workers' family characteristics was gathered at that time. It is possible, but unlikely, that for a large number of the workers resurveyed in 1963, there had been a substantial change in family status before they left the old job. However, even allowing for this, it is a bit startling to discover how little and how ambiguous a role differences in family characteristics played in either the old or the new labor

market. For the workers in the old factories, data were available on the worker's marital status; whether or not he had a working wife; the size of the household; the number of earners in it; the ratio of non-earners to earners; and the household's monthly per capita income.

It is a reasonable hypothesis that several of these family characteristics would have at least distinguished workers who would leave a job. The first clue that this might not have been so came from the old market, where personal factors might have been thought to play a large role in determining labor market behavior: When asked to list all the reasons that contributed to a decision to leave the old job, very few of the leavers (8%) even mentioned the family. In the same vein, only one of the family characteristics documented — marital status — showed any relation to labor market phenomena. In the old market, single workers were more likely to leave (S) than married workers. None of the other family relationships had any predictive effect, and even the effect of marital status, as the symbols indicate, disappeared when other characteristics such as age and education were held constant. If there is any significance in this weak correlation between family characteristics and decisions to change jobs, it seems that it was a lack of ties rather than the availability of family resources that made the difference.

Being single was associated with a few other market statuses or behaviors, but they seem neither consistent nor substantial. In the old market, the single workers were more likely to remain in the factory sector (S) when they were re-employed, while in the new market they were more likely to leave (S). The fresher applicants (R) were more likely to be single, while those applying for unskilled jobs were more likely to be married (R).

Before the family is abandoned as irrelevant to labor market analysis, however, one tantalizing finding must be reported, one that suggests that a more careful analysis of the family's role in job change decisions might be rewarding. As will be noted below, data on the worker's own job satisfaction were relatively poor predictors of the likelihood that he would stay or leave a job. However, the family's evaluation of the job does seem to have been important. The workers whose families thought that the old job was a bad one were much more likely to leave voluntarily (R) than those whose families thought it a fair or good one. In fact, workers whose families disliked the job were more likely to leave the factory sector entirely (R), and to gain in wages in the job transfer (S). They were also more likely to like the new jobs better than the old ones, in both interpersonal relations (R) and objective job characteristics (R). Whether the workers were projecting their true feelings about the job onto their families, or whether family job dissatisfaction was an independently important factor in motivating a job change is a question worthy of further research.

Attitudes

The correlation between reported family job satisfaction and relative worker satisfaction with the new job is linked to another interesting finding. By and large, very general attitudes toward work and the labor market had relatively little effect on job market behavior. However, while specific job satisfaction was a relatively poor guide to a worker's behavior, it did predict fairly well what his attitudes toward the new job were likely to be.

The data available on attitudes as predictors of job changes pertain only to the old market. In the 1957 study, extensive information was collected on the workers' general attitudes toward the work. These data included whether the worker preferred factory to non-factory work; whether he thought it would be easy to find another job if he were retrenched; if he was a production and maintenance worker; whether he thought he had a chance to become a supervisor someday; whether he preferred a job providing job security, higher pay, or a chance for advancement; and how important he thought the use of influence was in determining chances for career improvement. Any one of these work attitudes might have affected a worker's decision to leave a job, the kind of job he would seek in exchange, or how he would fare in the job market. However, the only apparent effect of any of these general attitudinal variables was that those who aspired to become supervisors (S) were likely to remain in the old job, and those who chose advancement as the most desirable job quality were more likely to leave voluntarily (S). None of the other general work attitudes made any significant difference in other forms of behavior, or their effect was so diffuse as to escape measurement.

When the worker was asked specifically about his satisfaction with the old job, the degree of satisfaction he expressed did predict whether he was more or less likely to quit (R), and whether he was more likely to prefer the new job to the old one (R). It will be recalled that three principal components were derived from the individual items measuring different aspects of job satisfaction. When a worker had a high job satisfaction score on the first principal component, the most general one, he was less likely to leave the old job voluntarily (S), but if he did, he would like the new job even better than the old one (R) in terms of both interpersonal relations and objective job characteristics. High job satisfaction seems to have been transferable.

Last Job

The differences between the two markets as to the extent of skill transfer have already been discussed, as well as the differences in social characteristics

and job experience among the workers in the new market who applied for each kind of job. The question raised here is a different one. Taking the characteristics of the last job as the independent variables, what did they predict about job market behavior and status? Put more generally, how much did what the worker was doing in the old job have to do with market behavior and the outcome of the job search? For the two samples of factory leavers, the last job was the one held in the factory they were leaving; for the applicants, it was the last job held prior to the time of application.

In the old market, the surprising fact is that not only was there very little skill transfer from one job to the other, but also the worker's occupational class and skill level had little to do with anything else. Clerks were more likely to stay in Pune for new jobs (R), and supervisors were more likely to transfer skills, but variations in skill level among the production and maintenance workers made no discernible difference in any of the market behaviors. Higher wage levels, another measure of skill, only predicted skill transfer (R), but then only the workers with the higher wage had much skill transfer. What of features of the worker's status in the old job unrelated to skill level or occupation, in particular, the permanence of the job and seniority? Temporary workers were more likely to leave than permanent workers (S), and to leave voluntarily (S). Seniority, which might have been expected to predict at least the likelihood that a worker would leave the old job, was not associated even with that. And that is it. In short, in the old job market, status in the old job seems to have made little difference in standing and behavior in the search for a new one.

The situation in the new market was not quite so indeterminate. For instance, applicants whose last job was clerical were more likely to apply for other clerical jobs (R), although earlier employment as a clerk seems not to have increased the likelihood that a worker would actually be hired as one in the new job. As noted earlier, in the case of the clerks, it tended to be social characteristics that made a difference in who would be hired. The clerks leaving the new factories were more likely to be re-employed (S) than those of other occupational classes, but outside the factory sector (S).

Those applicants who had been supervisors in the old jobs were more likely to apply for an administrative or technical job in the next employment; they found new jobs more quickly than others (R) and were more likely to transfer skills. High wages in the last job among those leaving the new factories resulted in a greater likelihood of re-employment (S), of going to another factory (R), of transferring skills (R), and, interestingly enough, of raising wages in the job exchange (R).

Those who had been still in a temporary status in the old jobs were likely to have left voluntarily (R), and those who left after working for a brief period

of time in one of the new factories were less likely to be re-employed (S). This was another reflection of the pattern discussed earlier: a high intake of workers, many of them new to the work force, followed by a short trial period and a subsequent withdrawal, at least temporary, from the labor market.

While the worker's position in the old job had more impact on market behavior and its outcome in the new market, the interesting fact is that this influence was not even more pervasive. One would have expected that such outcomes as the likelihood of getting a wage increase, of being hired, or finding a job in Pune or in another factory would all be highly correlated with the nature of the job the worker was leaving. Overall, this relationship was only moderate and spotty in the new market, among either applicants or job leavers, and very meager indeed in the old market.

Job Search Strategies

The discussion comes finally to what were temporarily the last set of independent variables and the ones that, somewhat surprisingly, had the most pervasive influence on the kinds of jobs being sought and the outcome of that search: how the workers went about looking for new jobs. Response to a published advertisement was relatively rare in the old job market, and made little difference one way or another in how the search would turn out. The use of the advertisement by factories was much more common in the new market, and those who answered advertisements were more likely to be experienced workers and not freshers (S); to be applying for white collar (R), particularly clerical (R), rather than blue collar jobs; and among blue collar workers, to be applying for skilled (R) rather than unskilled jobs. On the part of the factory, the ads were clearly aimed at bringing skills to the application process, and they did just that. As we noted earlier, from the applicant standpoint, the advertisements tended to raise the number of people applying for a job and thus reduced the likelihood of any particular applicant's being hired.

The written application process played somewhat the same role. Even in the old market, those who sought new jobs by filing a written application tended to remain in the factory sector (R), transferred skills (R), and gained higher wages (R). The same was true for workers leaving the new factories, except that there was an added feature: those who used the written application were more likely to be re-employed (S). The fact that these relations held true even when other variables such as skill level and education were held constant indicates that this search strategy itself was important.

The use of the Employment Exchange had a more equivocal effect. In the old job market, workers who left voluntarily (S) were more likely to use

the Exchange, but curiously enough they were also less likely to report a skill transfer to the new job. In the new market, fresher applicants were more likely to use the Exchange (S), and the workers applying for technical and applied jobs who came through the Exchange were more likely to be hired. *A priori*, the latter relation might have been expected to go the other way: the most desirable of the technical and administrative workers should have been free agents in the market and should not have needed the services of the Exchange. Among workers who left the new factories, those using the Exchange were more likely to leave the factory sector (R), another surprise, and to have gained in wages (R) as a result of the job change.

The use of the help of friends and relatives to find a new job made for, or was the result of, a long search (R). The worker was less, not more, likely to be hired (R), but if he were hired, it tended to be in a factory (R). The use of friends and relatives was more common among the blue than the white collar workers (S), and for those applying for blue collar jobs, it was more common among the unskilled. The unions played almost no role in the job exchange process, and when they did, they seem not to have made much difference in the outcome.

The general picture that emerges is that answering advertisements and filing written applications, formal mechanisms of recruitment and job search, were more characteristic of the new market and were more related to a transfer of skill. The use of traditional search mechanisms, particularly an approach through friends and relatives, was more characteristic of the old market, although it survived into the new one, and it was most useful to those with the fewest skills to transfer. A final note. For reasons that are a little difficult to fathom, workers who reported filing multiple applications were more likely to be hired on the application which appeared in the sample than workers who applied to only that one factory.

Chapter VII

An Agenda for Future Research

Having summarized the substantive findings of the various studies, let us turn to the implications of those findings for future research on industrialization both in India and elsewhere. Labor market analyses proceed at four different levels; the individual, the factory, the labor market, and the ecological setting in which the market behavior takes place. Traditionally, these various levels have been dealt with by scholars with different disciplinary perspectives. Sociological studies such as this one have tended to deal with the social characteristics, perceptions, attitudes, information, motivations, and actions of individual workers. Economists have tended to deal with the firm or the market, focusing on such matters as job opportunities and choices or the perspective of the corporate actors in the market — company managers, personnel directors, supervisors, etc. The ecological level has often been left to urban geographers, regional scientists and town planners. The issues they have raised include the availability of housing, power, transport, sanitation, water, the nearness of suppliers and markets, agglomeration and dispersion, etc.

Our surveys have touched all four levels, but unevenly, and lack a full interdisciplinary perspective. A high priority for further research would be to bring all of these levels more systematically into the same study, and to explore the interactions between individual worker behavior, the firm, the market, and the ecological setting. Short of such a mammoth undertaking, however, it is useful to explore what kinds of issues our data raise at each of the four levels.

At the level of the individual, some of the most important implications of the surveys have to do with the specification of variables, in particular what it is we were trying to explain. Our conclusion in the earlier study, that in discussing job 'commitment' it was necessary to distinguish between the worker's commitment on the job and the company's commitment to the worker, had to do with what questions were really being addressed. A similar consideration led us to concentrate in this study on voluntary departure rather than separations as the appropriate unit of analysis, and voluntary as defined by the worker rather than the usual notion of 'quits' which tends to be defined by the company.

In a similar fashion, we found the notion of job satisfaction too hetero-

geneous to lead to meaningful analysis. In all of the analyses dealing with workers' attitudes toward their old or their new jobs we found that the individual items fall along two clearly distinct dimensions, the objective characteristics of the job and the worker's interpersonal relations with his superiors and fellow workers. Blending them together distorted the meaning of both.

A further conceptual question was how best to summarize individual work careers, since, particularly in the old labor market, there seemed to be so little connection between one job and the next. Should one deal with job exchanges, as is often done in the literature, or should one deal separately with quitting and getting a new job as we have done? And since next job transfers are horizontal in the old labor market, and there is relatively little upward mobility within a firm as well, how appropriate to Indian data is the notion of a career with its implication of cumulateness and gradual movement upward upon the part of the worker? How should one summarize and compare occupational histories in traditional labor markets?

In addition to these essentially methodological points, the surveys suggest some substantive domains of research that might be pursued. For instance, the most striking finding in the study of the old labor market is the low level of determinancy for such behavior as leaving or staying in the old job, getting a new job quickly, gaining wages in the job transfer, or carrying occupational skills from one job to another. Particularly remarkable is the fact that some important social attributes such as caste, mother tongue, age, and family characteristics seem to have little impact on labor market behavior. In view of the importance of such social placement variables in Indian society, this lack of a carryover of vital social markers into the labor market deserves further investigation.

Further, the low level of determinancy of social variables in explaining labor market behavior makes it essential that the next round of research explore the psychological processes on the part of the worker which lead him to stay or leave a factory, or to seek a particular type of new job. In the old market at least, with workers making seemingly separate decisions to leave one factory and to seek re-employment elsewhere, information theory plays only a marginal role. Perhaps the answer lies in the worker's attitudes, perceptions and motivations. The turnover process cannot be as random and idiosyncratic as our data suggest. A much more focused study on worker decision-making is called for.

There is another important type of analysis at the individual level that these studies have left untouched, but might well be a subject of research in the next phase. We refer to the quasi-ethnographic descriptions of the labor market behavior by socially defined sets of individuals. For instance, what

happens to Untouchables, Brahmans, women, artisan castes, in-migrants etc. Such investigations would supplement our aggregate analyses in which such groups have been subsumed under a more general rubric such as caste, sex, or migrant status. An examination of the careers and market behavior of one or more of these groups would be an interesting extension of the research.

The second level of analysis is the firm. Perhaps it is the characteristics of the company rather than the worker that determine the processes at work in the labor market. In point of fact, even though the results were sparingly reported here, we examined differences among companies in the operation of the labor market in considerable detail. For instance, we had up-to-date information on each factory's occupational composition, wage level, and recent experience in the job market, all of which would have been expected to have substantial effects on its role in the labor market. However, two things inhibited a thorough analysis of company differences. In the first place, while several thousand workers in all were involved in the various studies, they were drawn from only five factories in the old market sample and thirteen in the new one. While such samples are an improvement on the single firm case study, the small sample sizes for a given company in any particular analysis, produce such large standard errors that meaningful statistical analyses of the relationship between company characteristics and market processes was impossible. A second reason for a lack of a systematic presentation of factory differences was that the comparisons among companies that we did make showed only a very weak differentiation. While some differences among companies did appear, they were unsystematic, and tended to disappear when the effect of differences in worker characteristics was removed. Factory differences both single and in combination were included in all of the initial regression analyses, but they rarely emerged as having a major effect on labor market behavior. Moreover, when we combined the factories in both surveys into a single set, the contrast between the old and the new markets was considerably greater and more systematic than the differences among the individual factories in each market. These findings suggest two obvious next steps: first, including a wider variety of firms and analyzing in greater detail their labor market practices; and second, gathering data on many more firms so that patterns of differentiation have a chance of emerging from the statistical analysis.

The third level of analysis is the labor market. In our case this was a derivative from the aggregate actions of the individual workers and the companies to which they applied or that hired them. A high priority in the next phase of research would be the identification of a wider variety of

market types. Our simple typology of new and old with its implicit modernization dimension and with its notion of unidirectional change is just the beginning of such a typology. The fact that these markets were so different and had so little to do with each other even when they coexisted in the same city suggests that holistically varied types of markets exist and that a useful taxonomy of the different genera might be constructed. Whether or not markets will arrange themselves on a continuum from traditional to modern remains to be seen.

These surveys have dramatically illustrated the fact that in any future research on labor markets, the normative standard against which they are being judged must be made explicit. Abstract notions of economic rationality were almost irrelevant to the analysis of the Pune labor market. However, the data suggested that the operation of the market as a whole was well-adapted to its functional requirements. In the old market, jobs were by and large at a low skill level, with relatively little social capital invested in the occupations either by the worker or the employer. The workers' abilities, technical skills, and education, were not very different from those required in non-factory jobs in the general urban setting. The boundary between the organized and the unorganized sector, both in the organization of production and in worker movement, was not very rigid. Hence the informal job search strategies, non-skill-oriented recruiting practices, and easy movement in and out of the factory sector which were characteristic of the old market all made sense in this context. And since the determination of who left and who stayed in the factory was almost random, it also made sense for the companies to surround themselves with a buffer of *badlis* and temporary workers to defend against the indeterminacies of the market. Recruitment put relatively little emphasis on past occupational history and proceeded on the basis of personal influence with its promise of corporate responsibility for future productivity. The abundance of candidates for employment made such a strategy possible.

In the new market, the skill differential between factory and non-factory employment became greater, and workers with the most highly prized technical skills became relatively, if not absolutely, scarce. In such a setting, the written application became important both in the job search and in the screening process of employers since skill level and past work history were now important. The buffer of *badli* and temporary workers was replaced by a pool of highly educated apprentices and trainees, and workers leaving the factory did not move into jobs in the unorganized sector. In short, the nature of the market processes changed to reflect the new functional demands. A systematic examination of the extent to which features of the labor market are adjusted to functional needs would be a very useful basis for the next stage of research.

It would also be interesting to examine the relationship between labor market processes and the quality of the product. In the labor market in Pune filling jobs demanding a fair amount of technical skill with highly educated but inexperienced freshers in many factories resulted inevitably in low production quality. Rejection rates were, in fact, quite high in the early years of production in several of the factories. For the factories, however, this fact had very little economic impact since the backed up consumer demand made it possible to sell the products no matter what their quality. The more general research question, then, is what is the relationship between the level of consumer demand and the operation of the labor market.

The final level of analysis is the ecological one, the geographic setting in which the labor market developed. Only one aspect of geographic context was covered in our surveys, the educational expansion that made it possible to make the radical transformation from the old to the new labor market. The surprising thing was how quickly Pune changed from a relatively stable educational, administrative, and cultural center to an industrialized city. The shift in labor market demands that accompanied this change was startling not only in terms of the number of new jobs that had to be filled, but also that the old and the new markets were really quite different in the characteristics of the participants, the search processes used, the skill demands of the jobs to be filled. The transformation that was required was large-scale and sudden. And yet, when they were needed, Pune turned out workers with technical training useful to the new factories, and the institutional situation changed rapidly from the *badli* system to apprentice-trainees, people started placing and answering advertisements, relatives and friends played different roles in recruitment, and people with economically useful characteristics appeared in ample numbers and were hired.

Obviously, the potential for such a transformation was already there, but could this have been specified in advance? Are there cities in India or the developing world where the transformation would have been less successful? Could it have occurred without the massive investments in general education that preceded this spurt of industrialization? And more generally, does the fact that the potential was there, change our perspective on so-called traditional societies? Are they as monolithic, rigid and wedded to their ways as much of the literature suggests? The data in these studies suggest that the answer is no, but research focused precisely on the relationship between labor markets and their ecological setting would be quite revealing.

Appendix A

A Note on Methods of Data Analysis

In the course of analyzing the four sets of questionnaires which form the basis of the studies reported in this book, a great many analytical techniques were used to explore potentially complex relationships and test hypotheses about how the various labor market processes in Pune actually worked. Yet in the end the only methods needed to communicate the results were a scan of the two-way tables containing gross associations, and the regression analyses, with their more controlled representation of relationships. The reasons go to the heart of our substantive findings; namely,

- (1) very few variables explain or predict most of the outcomes of interest (voluntary leaving, wage gain, skill transfer, hiring);
- (2) the independent variables (predictors) themselves are not that highly correlated, within or between 'blocks' (social status, previous job history, present job characteristics, general attitudes, etc.);
- (3) when there are strong predictors, such as age in the case of re-employment in the 'old' labor market, they tend to dominate the equations; otherwise,
- (4) the outcomes depend on adventitious factors in the specific circumstances of the respondents (such as personality conflicts with supervisors, union activity, family problems, idiosyncratic information about opportunities, etc.) which fall outside the scope of our questionnaires and, indeed, of any systematic analysis.

Whether this is a consequence of observing only the random variations around some sort of stable, systematically determined equilibrium, or of not having measured some of the key variables (such as actual opportunities or worker productivity characteristics), the fact remains that hidden, deep structure is not to be found in our data. Conversely, all important conclusions are substantiated by any method.

In this Appendix the range of methods used in the analysis is discussed briefly. Our aim is two-fold: first, to give researchers working on other social contexts with similar, but perhaps more highly structured data, an idea of how they might be analyzed; and, second, to clarify our own arguments by indicating some of the plausible hypotheses which were investigated but not supported by the data. We begin with some comments on the regression models used throughout the text which form a point of departure for all of the other methods. In keeping with the rest of the book the presentation is

non-technical and the interested reader is referred to the literature cited below for further discussion.

Logit Regression, Ordinary Least Squares, and Discriminant Analysis

Uses of Regression. Most of the labor market behaviors, outcomes, and job comparison items studied in this book (e.g., voluntary leaving, getting a new job within six months, being hired as a clerk, preferring the new job to the old one) are binary variables which can be conventionally coded as 1 if the 'event' occurs, and 0 if it does not. As noted in Chapter 2, regression analysis is used to obtain controlled measures of the associations between our various independent variables or predictors (social status, job history, attitude items, etc.) and these events. The uniformity of method masks the fact that the regression analyses serve different purposes in different sections of the book and to properly interpret the results it is important to bear the underlying models in mind.

In many of our discussions the binary event may be thought of as 'causally' dependent on the independent variables, and the regression analysis is designed to measure the effects of the independent variables on the event. Leaving voluntarily as a function of social status characteristics and attitudes, getting a new job immediately as a function of previous job and labor market history, or gaining wages as a function of skills and the conditions of leaving the old job, are cases in point. Often the outcomes are choices made by the respondents and we want to determine how various factors affect the alternative selected. As Mosteller and Tukey¹ emphasize this is the most ambitious and the most hazardous use of regression analysis; it is regression analysis, properly speaking.

In a second type of analysis, which relates to situations addressed by classical discriminant analysis, the role of dependent and independent variables is reversed. The binary variable is independent, marking two exogenously defined groups or populations, which can be characterized in terms of multiple characteristics. The problem is one of finding a combination of the characteristics which differentiates the two groups in a parsimonious (and controlled) way. Contrasting the hired with the not hired among the applicants to the new factories (Chapter III) comes closest in our analysis to

¹ F. Mosteller and J. Tukey, *Data Analysis and Regression*, Reading, MA: Addison Wesley, 1977.

this pattern. Personnel managers exogenously define the two groups and we want to determine the applicant attributes which are, then, typically found in each.

In yet a third group of analyses any imputation of causality or temporal priority is problematic. In contrasting voluntary and involuntary leavers, for example, one outcome is determined by the respondent (voluntary), the other by the factory management (involuntary), no doubt as the result of quite different choice processes. Here the regression analysis is used as a way of summarizing, as precisely as possible, a functional relationship between a set of variables (the respondent characteristics) and a binary event, making due allowance for the inter-correlations of respondent attributes.

As a rule, the choice between different regression models should be guided by the purposes of the analysis.² It is, however, easy to slip into language that muddies the distinctions because at a general level all of the different types of 'regression' amount to the same thing: find a linear combination of the independent variables or predictors which best fits (is most highly associated with) the binary variable (in some sense). Thus a given method can be used to find the combination of respondent attributes which is most highly correlated with the outcome in all three analyses, although the interpretation of the coefficients will differ from analysis to analysis.

Regression Models. Let y represent the dependent variable (e.g., voluntary leaving vs. staying) and x_1, \dots, x_m represent the independent variables (education, family, job satisfaction, Brahman, etc.). Very briefly, two methods of regression analysis are used to study binary variables in this book. The language is that of the causal interpretation of regression. The first is the so-called 'linear probability' (LP) model whose key features are:

$$\text{LP1: } y = \text{constant} + b_1x_1 + \dots + b_mx_m + e$$

LP2: Expected value of y = Probability that y is 1.

$$1 = \text{constant} + b_1x_1 + \dots + b_mx_m$$

LP3: e is random ('error') term

LP4: The coefficients, b , are estimated by ordinary least squares.

The linear probability model is just the familiar method commonly

² For an excellent review, see R.R. Hocking, 'The Analysis and Selection of Variables in Linear-Regression,' *Biometrics* 32 (1976): 1-49.

used to analyze quantitative dependent variables. For a binary independent variable coded as a dummy variable, *e.g.*, being married vs. being unmarried, the coefficients measure the (estimated) differences in proportions of voluntary leavers, say, in the two groups, when the effects of all other variables in the equation are controlled. For quantitative x the coefficients measure the change in the proportion of leavers for unit change in x .

With binary dependent variables LP has potentially serious conceptual and statistical limitations. First of all the right hand side of LP2 is unbounded so that, for very large or very small x , the probabilities of the event in question and their estimates must fall outside the required $(0, 1)$ range. Secondly, since the errors cannot be normally distributed, the usual statistical tests (t-tests and F-tests for the coefficients) do not apply; and, moreover, ordinary least squares – or even weighted least squares to take account of the heteroscedasticity of e – is not an optimal estimation method. These problems are solved at a stroke with the logit regressions reported above, the method of choice for binary dependent variables. The model is:

$$\begin{aligned} \text{LOGIT1: } \ln \frac{\text{prob}(y=1)}{\text{prob}(y=0)} &= \text{logit}(y) \\ &= \text{constant} + b_1 x_1 + \dots + b_m x_m \end{aligned}$$

$$\text{LOGIT2: } \text{prob}(y=1) = \frac{e^{\text{logit}(y)}}{1 + e^{\text{logit}(y)}}$$

LOGIT3 : y is Binomially distributed

LOGIT4: the coefficients, b , are estimated by maximum likelihood

The logit is the logarithm of the odds of the event occurring (*e.g.*, leaving voluntarily vs. staying). It is as plausible a way of describing the chance that the event occurs as the probability itself, and for various technical reasons leads to a cleaner statistical analysis.

Because of LOGIT2, no matter what the values of x , neither the probabilities nor their estimates can fall outside the $(0, 1)$ range; and because of LOGIT3 and LOGIT4, estimation and statistical tests are appropriate. For dummy variables, x , the coefficients measure the logarithm of the ratio of the odds of the event occurring in the two groups; for quantitative x they give the logarithm of the odds ratio for unit differences in x .

Despite their differences the logit model and the linear probability model lead to qualitatively similar results in many instances. Indeed, in all the analyses reported in this book the relative sizes of the coefficients are about the same in both models, and the t-tests of the coefficients are at about

the same level of significance. From LP2, LOGIT1 and LOGIT2 it can be seen that logits and probabilities are transformations of one another. Although the transformation is in general non-linear, in the middle of the probability range (say, .2 to .8) it is, in fact, approximately linear.³ Thus, except for very probable or very improbable events, the logit is a rescaling of the probability, with logit coefficients for our analyses about four to eight times the size of their OLS-LP counterparts. As for t-tests, the variances of the 'errors' do not in fact vary that much with their means for moderately likely events, and the close connections between binomial and normal distributions then imply that OLS is not so bad an estimation method, and that the t-tests in the two models will be similar. A final point about regression and discriminant analysis is in order. If the characteristics found in the two 'populations' (e.g., hired vs. not hired) are jointly normally distributed with equal covariance matrices, then the coefficients of the LP model are the same as the classical (Fisherian) discriminant function.⁴ Also, the logarithm of the posterior odds of falling in one group rather than the other is given by the logit regression. Predictors like the ones considered in this book (e.g., Brahman, married, seniority, etc.) are clearly *not* jointly normal so the LP coefficients are not appropriate; the posterior odds may still be linear in the non-normal case. Nevertheless, for the same reasons just noted, the LP model is often an adequate approximation to the better specified logit model, and either can be serviceable in commonly encountered practical situations.

Other Methods: Structures We Failed to Find

In this section we comment briefly on the methods used to explore structures of greater complexity than those of the logit and OLS regressions, along with the ideas of labor market processes that motivated them.

Interaction Effects. In all of the regressions reported in the text the independent variables enter in a simple linear fashion. This means that the effect of changing any one of them on the outcome in question does not depend on the levels of the other variables controlled in the equation. Before

For example, see D.R. Cox, *Analysis of Binary Variables*. London: Methuen, 1970; and H. Theil, 'On the Estimation of Relationships Involving Qualitative Variables,' *American Journal of Sociology* 76 (1970): 103-54.

arriving at this specification a large number of models containing interaction terms was tested and found unnecessary. In interaction models the effects of a given variable are contingent on the values of other variables. It is, for example, entirely possible that caste differences in getting a job depend on what occupational group (clerks or production/maintenance workers) one is considering; or that a respondent must be *both* educated *and* a Brahman to be favored in the job market; or that high wage professionals had an easy time getting a new job whereas high wage unskilled workers had a difficult time. In each such case, there is no such thing as *the* effect of a variable; rather, there are different effects depending on the conditions. (In the last example the effect of wage on getting a new job is positive for professionals, negative for clerks.)

Interactions were tested in the standard way by adding products of the independent variables to the regression equations and computing F-tests⁵ to determine if the new terms added anything to the fit. When only a few qualitative independent variables were being considered, Chi Square tests as used in contingency table analysis⁶ were also computed. In no case was there any evidence that the interactions were stronger than one would expect by chance.

Factory Differences. A special type of interaction which we expected to find pervasively in the studies derived from possible differences between factories in job demands, personnel policy, and the way workers were recruited and motivated. In examining whether workers interviewed in 1957 had left by 1963, the five factories involved differed considerably in their degree of 'modernization,' and they might consequently have evidenced quite different patterns (as well as amounts) of turnover. Similarly, the hiring patterns of the new factories in Chapter III might have differed as a function of their industry type and level of technology.

Following procedures described, for example, in Bock⁷ and Finn,⁸ factory effects were parametrized in terms of the similarities and differences we thought might be important. Hypotheses were then tested to see whether (a) these particular characteristics accounted for observed factory differences

⁵ Theil, *loc. cit.*

⁶ S.E. Fienberg, *The Analysis of Cross-Classified Data*, Cambridge, MA: MIT, 1977.

⁷ R.D. Bock, *Multivariate Statistical Methods in Behavioral Research*, New York: McGraw-Hill, 1975.

⁸ J. Finn, *A General Model for Multivariate Analysis*, New York: Holt, Rinehart and Winston, 1974.

(they did not); and (b) whether characteristics of the factory combined with characteristics of the workers to produce interesting interaction effects (they also did not). By and large, it was surprising how few factory differences there were considering the diversity of their age, technology, and products. (The association between retrenchment in the paper mill and involuntary leaving, noted in Chapter II, is an exception.) Put more positively, the labor market processes we observed had similar characteristics across rather diverse technological settings, and in this sense our findings are quite representative of the time and place to which they refer.

Blocks of Variables. The grouping of the independent variables into the 'blocks' defined in Chapter I (social background, previous job history, general and job related attitudes, etc.) was one of the most important features of our conceptualization. By analogy with the job satisfaction items that were ultimately combined into the alienation scale, we reasoned that even though individual variables in the blocks might not seem important, the block as a whole might have a significant effect on such outcomes as leaving voluntarily or preferring the new job to the old. Moreover, we were more interested in comparing the effects of the block of attitudes as a whole with those of social background, as opposed to comparing a specific attitudinal item (such as intending to return to a village after retirement) with a specific aspect of social status (such as education).

Block effects, and indeed the simultaneous effects of any set of variables, can be and were tested with F-tests in the regression analysis. One could also combine a block of variables into an index, *a priori* or by some form of factor analysis, and test the effects of the index (as was done with the attitude items). Going beyond the usual regression model we attempted to combine variables within blocks and measure an overall block in a single analysis, using various 'causal modelling' techniques. The best known of these is Joreskog's LISREL, but because our dependent variables were often qualitative and the measured indicators of the latent variables (*i.e.*, the blocks) obviously non-normal, we emphasized Wold's partial least squares based 'soft models.'⁹ Using either method, however, the blocks and latent variables were always dominated by the few observable variables that were significant in the Logit and OLS regressions, and hence no new or revealing 'block' effects emerged. In all likelihood the causal model did not advance the analysis very far because the variables in each block were too heterogeneous and did not, accordingly, measure 'the same' (latent) concept. Insofar as the blocks make

⁹ H. Wold, 'Nonlinear Iterative Partial Least Squares (NIPALS) Modelling: Some Current Developments,' In P. Krishnaiah, ed., *Multivariate Analysis II*, New York: Academic Press, 1973.

theoretical sense, however, the absence of block effects testifies to highly idiosyncratic characteristics of the labor market phenomena in question.

Timing of Leaving Factories. In Chapter II, voluntarily leaving the five 'old' factories was analyzed as if it did not matter when, in the six years between the 1957 survey and the 1963 follow-up, the factory was left. That is: the analysis assumed that, in studying the determinants of leaving, it did not matter whether leaving was defined as 'leaving within one year,' 'leaving within three years,' or 'leaving within five years.' But since the Pune labor market was changing rapidly over this period, it was entirely possible that analysis of these different 'survival rates' would yield quite different substantive results. At least the assumption of uniform effects should be tested. To do this the method described by Koch and his colleagues¹⁰ was used. This involved, first, concentrating on the key independent variables so that the data could be reduced to a contingency table with only a few empty cells; and then testing the hypothesis of uniform effects with the minimum logit Chi Square methods described in the article. As it turned out, our assumptions were confirmed, but more detailed data on timing and the characteristics of the workers at the time of leaving might well lead to a different result. This is an interesting topic for future research in other studies.

Had the timing analysis proved more fruitful we had planned to combine the separate analyses of voluntary and involuntary leaving vs. staying into a single analysis using models of competing risks.¹¹ As it turned out, this seemed like a blind alley.

Selection Bias. A potentially serious problem in any longitudinal study is the bias that might result from estimating regressions on subsamples which are not randomly selected from the populations or base samples to which one hopes to generalize. This problem of 'selectivity' arose at many points in our analysis. For example, in studying which leavers ultimately get re-employed we could only observe leavers who could be found in 1963, but if being found and being re-employed are systematically related, bias may result. Similarly, new job outcomes can only be observed for people who get a new job in the period between interviews, but these may not be representative of all leavers.

Issues of selection bias have received considerable attention in the

¹⁰ G.G. Koch, W.D. Johnson, and H.D. Tolley, 'A Linear Models Approach to the Analysis of Survival and the Extent of Disease in Multidimensional Contingency Tables,' *Journal of the American Statistical Association* 67 (1972): 783-96.

¹¹ R. Ginsberg, 'The Relationship between Timing of Moves and Choice of Destination in Stochastic Models of Migration,' *Environment and Planning A*, 10 (1978): 667-79.

recent methodological literature. Heckman¹², in a widely cited paper, has posed the issues sharply and suggested a way of arriving at more valid estimates in cases like those just mentioned. Before embarking on our analysis of outcomes for leavers in the old market, a careful study of potential selection bias was carried out and Heckman's method (as implemented and refined by Green in the computer program LIMDEP) was used to correct any that should be found. Suffice it to say that the corrected estimates were the same in both cases as the simple OLS regressions, and that by and large there was not evidence of selectivity. This again is strong support for our general conclusion concerning the absence of strong systematic effects determining labor market processes.

In general we believe that had the study been designed differently, and different variables measured, the selection bias models would have proved as useful with our data as with data sets on labor force participation and wages in the U.S. and Europe. Here too, however, the threat of selection bias has often proved worse than its actual effect.

Multivariate Analysis. The final set of methods designed to draw out the basic structure of the data comprises that large set of procedures comprising classical multivariate analysis.¹³ It includes canonical correlation, multivariate regression, principal components analysis of partial correlation matrices, discriminant analysis, and a whole battery of multivariate tests. All of the studies of new job outcomes, for both the old and new markets, which involved multiple, intercorrelated outcome variables (*i.e.*, the different criteria of comparison) were done with both multivariate and univariate methods using Finn's comprehensive program MULTIVARIANCE. A description of multivariate analysis would take us well beyond the confines of this Appendix. Suffice it to say that when many related dependent variables are being analyzed simultaneously, multivariate tests and summaries should be used to reduce the redundancy in the analysis, explore interrelations between the dependent variables, and control significance levels for the random but spurious effects of carrying out many tests. It should come as no surprise by now that, with our data, the multivariate and univariate analyses led to essentially the same conclusions. Substantively this underlines the con-

¹² J. Heckman, 'Sample Selection Bias as Specification Error,' *Econometrica* 47 (1979): 153-61.

¹³ See standard texts such as R.D. Bock, *Multivariate Statistical Methods in Behavioral Research*, New York: McGraw-Hill, 1975; J. Finn, *A General Model for Multivariate Research*, New York: Holt, Rinehart and Winston, 1974; P. Green, *Analyzing Multivariate Data*, Hinsdale, IL: Dryden Press, 1978.

clusions of Chapters II and IV that the outcomes of job changes, which one might have hypothesized to be highly interrelated, are, for Pune, at least, much more discrete.

Appendix B
Survey of Factory Labor in Pune, 1963-1964

Richard D. Lambert

Questionnaire

Schedule C

Name _____ Sample No. _____

Latest Address _____
 Date _____ Address _____

Current Address _____

In January 1957 you were working at _____ as a _____
old factory *job title*

I want to ask you a few questions about your work career since that time; that is, about your departure from _____, your present job, and what you have been doing in between then and now.

First, a few things about your leaving _____
old factory

When did you leave _____? 2. Were you then a perma-
Month *Year*

ent (), *badli* (), temporary worker (). 3. At the time you left, what was your monthly wage? Basic _____, D.A. _____, Other (specify) _____, Total _____.

Was the decision to leave this job your own () or the company's ().

5. If you left by your own free choice, what were some of the reasons why you left the job? Were there any other reasons? Which one would you say was most important? (Please check)

a. _____

b. _____

c. _____

d. _____

e. _____

Which of the above reasons would you say was most important. (Please check)

6. Did you leave the old job because you had already found a better job? Yes () ; No (). If yes, were you already working at the new job before you notified the old company of your departure? Yes () ; No ().

7. If the company dismissed you, what reasons did they give?

a. _____

b. _____

c. _____

8. Was your departure part of a general retrenchment of workers? Yes () ; No (). If you were retrenched, how many other workers were dismissed at the same time you were? _____. Why were you dismissed rather than someone else in your job or your department? _____

9. At the time you left your old job, had you used up more than you permitted leave time? Yes () ; No (). If yes, was your excess of leave due to illness () , attending weddings, funerals or other ceremonies () , family business () , other (specify) _____

10. Was your departure because of a quarrel with your supervisor? Yes () ; No (). If yes, what was the subject of the quarrel? _____

11. Do you think that you had reason to complain about the circumstances of your departure? Yes () ; No (). If yes, what is your complaint?

12. Did you in fact complain to the company? Yes () ; No (). To the union? Yes () ; No (). Was anything done about your complaint? Yes () ; No (). If yes, what was done? _____

Now, I would like to ask you a few things about your transfer from the old company to your next job.

13. After leaving _____, how long was it until you got another
old factory
job?
No time at all () Up to three months ()
Up to a week () Up to six months ()
Up to a month () Up to one year ()
More than a year (specify) _____
14. Was your last pay and gratuity enough to support you and your family during this period? Yes () ; No ().
15. If no, what other sources of income did you use? Relatives () , Savings () , Casual work () , Borrowed money () , Other (specify) _____

16. How much did you receive in cash for your Provident Fund in _____? None () , Rs. _____. How much of that money, if any,
old factory
do you still have? None () , Rs. _____.
17. When you left the old job, did you register with the employment exchange? Yes () ; No (). If yes, did they help you in finding a new job? Yes () , No () .

18. Did your experience in the old job help you in any way in getting a new job: _____
19. How did you go about seeking a new job? _____
20. The following questions are to be asked if answers are not given in question above.
- a. Did you answer advertisements in newspapers? Yes () ; No ().
- b. Did you send in written applications? Yes () ; No (). If yes, did they help? Yes () ; No ().
- c. Did a union help in finding a job? Yes () ; No ().
- d. Were you told about a job by friends? (), relatives (), Did they help you in getting a job? Yes () ; No ().

The following questions have to do with the first job you got after you left _____

old factory

21. At what wage did you start in your new job? Basic _____
D.A. _____, Other (specify) _____
Total _____
22. How long did you serve in apprentice or temporary status in your new job?
- | | |
|----------------------------------|------------------------|
| No time at all () | Up to three months () |
| Up to a week () | Up to six months () |
| Up to a month () | Up to one year () |
| More than a year (specify) _____ | |
23. What was your monthly wage when you were first made permanent or moved out of apprentice status? Was it always permanent? (), never became permanent (). Total _____
24. After leaving _____ was your next job in a factory?
old factory
Yes () ; No ().

25. What was the name and address of your new employer? _____

26. About how many workers were employed there? _____
27. What kind of work did you do there? _____

28. Did the job for which you were hired there use any of the skills you had acquired at _____ ? Yes (); No ().
old factory
29. In general, do you think that you improved yourself with the change of jobs? (), or were you in a worse position in the new job than in the old? ().

-
30. Next, I want you to give me some information about each different job you held, either changing from one employer to another or from one job to another with the same employer, between the time you left _____, and the time you first started working at the job you now hold. If you went directly from _____ to your current job, skip to next question.
old factory

Date Started	Employer's Name	Product/Service	Job Title	Number Employees	Monthly Wage Begin	Monthly Wage End	Date Ended	Reason Left
--------------	-----------------	-----------------	-----------	------------------	--------------------	------------------	------------	-------------

Now, I need some information about the job you are holding now.

31. Are you now unemployed (), self-employed (), working for a private employer (), working for the government (), working for a company but not in a factory (), working in a factory ().

32. If you are working but not in a factory, what kind of work do you do? (If unemployed or working in a factory, skip to question 37) _____

33. How much do you earn every month? Rs. _____.
34. Do you prefer what you are now doing to factory work? Yes ()
No ().
35. Had you done this kind of work before you worked at _____?
old factory
Yes (); No ().
36. Do any other members of your family do the same type of work? Yes ()
No (). If yes, is your current work in a family enterprise? Yes ()
No ().
37. If you are currently working in a factory, what is the name of the
factory? _____
38. What does it manufacture? _____
39. About how many workers are employed there? _____
40. Are you at present a permanent (), temporary (), *badli* (), worker?
41. When were you first employed by your present employer?

- | | |
|--------------|-------------|
| <i>Month</i> | <i>Year</i> |
|--------------|-------------|
42. If you are permanent, how long after you were hired did you become
permanent?
- | | |
|----------------------------------|------------------------|
| No time at all () | Up to three months () |
| Up to a week () | Up to six months () |
| Up to a month () | Up to one year () |
| More than a year (specify) _____ | |
43. What was your first job in this factory? _____

44. What different jobs have you done in this factory: Including present one?

<u>Dates</u>	<u>Job</u>	<u>Wage</u>	<u>Reason for Change</u>

45. At what monthly wage were you first employed here?
 Basic _____, D.A. _____, Other (specify) _____.
 Total _____.
46. If you served an apprenticeship or temporary period, what was your wage when you first became permanent? Basic _____, D.A. _____, Other (specify) _____, Total _____.
47. Was your first job in this factory at an unskilled (), semi-skilled (), skilled (), supervisory (), or clerical () level?
48. Is your present job in this factory at an unskilled (), semi-skilled (), skilled (), supervisory (), or clerical () level?
49. What is your current monthly wage? Basic _____, D.A. _____, Incentive _____, Other (specify) _____, Total _____.
50. Comparing your current job with the job you held at _____, *old factory* would you say that your current job is generally better () or generally worse () than the one you held then?
51. I want you to compare the two jobs, telling me whether the old job is better, or they are about the same in respect to the following characteristics:

Characteristic	Old Better	Current Better	About Same
-----------------------	-------------------	-----------------------	-------------------

- Chance for Advancement
- Security of Job
- Pay

51. (cont.)

Characteristic	Old Better	Current Better	About Same
d. Your Relations with Immediate Supervisor			
e. Your Relations with Top Management			
f. Your Relations with Other Workers Equal to You			
g. Your Relations with Inferiors			
h. Pleasantness of Actual Work			
i. Pleasantness of Surroundings			
j. Hours of Work			
k. Nearness to Residence			
l. Effectiveness of Unions			

52. If you were offered your old job back at _____ would you take it? Yes (); No ().

53. Has the opening of so many new factories in the Pune area affected you in any way? Yes (); No (). If yes, please specify. _____

Appendix C
Applicant Questionnaire

Richard D. Lambert

1. Full Name _____ 2. Serial No. _____

3. Name of Factory _____

Job Applied for _____

4. Applicant's Complete Address _____

5. Age _____ 6. Male/Female _____

7. (a) Highest grade completed in school or college _____
Year in which completed _____

(b) Please fill in the following table if you have had any technical education, whether it was related to the job applied for or not:

Nature of Education	From	To	Name of Institute or Factory	Place of Education City, Dist., State	Certificate or Degree, if any

(c) If you have worked as an *Apprentice* in any factory, please fill in the following table:

From	To	Name and Address of Factory	Details of Work Done	Stipend

8. Religion _____ Caste _____ Sub-Caste _____

9. Marital Status: Married/Unmarried/Widower/Widow/Divorced
10. Language Particulars: Read? Write? Speak?
 (a) Mother Tongue
 (b) English
11. (a) What kind of job or service did your father do for most of his life?
 (b) Did he ever work in a factory? Yes (), No ()
 (c) Did he ever work on a farm? Yes (), No ().
12. In the table below, please supply information on your work history for the past five years. Please include all of your jobs, whether or not they relate to the job for which you are applying, and whether or not they were in or out of factories.

Date of Joining	Name and Address of Employer	Items Produced	Specific Nature of Your Work	Monthly Salary Start Leaving	Date of Leaving	Reason for Leaving
1959						
1960						
1961						
1962						
1963						
1964						

13. During the past five years or earlier, what jobs have you held which you think would give you useful experience for the job for which you are now applying?

Job	Company	Dates
_____	_____	_____
_____	_____	_____
_____	_____	_____

18. At what places, including Pune and your native place, have you lived?

Name of Place	Is it a Village?	District?	State?	Arrived Date	Left Date	Employed There	
						Yes	No

19. (a) If you lived somewhere other than Pune, did you come to Pune to get a job? Yes (); No ().
- (b) If yes, had you already secured a job in Pune before you came here? Yes (), No ().
- (c) If no, had you heard about a specific job and thought you might get it? Yes (), No ().
- (d) If no, had you heard there were generally jobs available in Pune? Yes (), No ().
- (e) If no, did you have friends or relatives here who promised to help you look? Yes (); No ().
20. Aside from getting a job, what else brought you (back) to Pune? Check as many of the following reasons as apply.
- (a) I always lived in Pune.
- (b) It was not my idea; my family moved here so I came with them.
- (c) I came here for schooling.
- (d) I came to live in my husband's/wife's house when I got married.
- (e) My job/education in another place was finished so I came back here.
- (f) I came for the Pune climate and life.
- (g) Other (specify)
21. If you lived outside of Pune, did you move to Pune because it would have been difficult or impossible for you to remain where you were? Yes (); No ().

If yes, what were the reasons? _____

22. In the following questions, please do not consult anyone else for the answer. Whether or not you know the answer has nothing to do with your chances of employment here. We are trying to get some idea of how well-known our company is.

(a) List as many products now manufactured by this company as you can.

(b) Is it (check one)

wholly Indian owned
 wholly foreign owned
 Indian-foreign collaboration

(c) About how many workers are employed here? _____

(d) Where is its headquarters located: _____

(e) List the location of as many different branch factories of this company as you can

23. What salary do you expect to get if you are employed here?

24. How long would you have to wait before you could start work here?

Months _____ Days _____

25. If there is no opening for the specific job you are applying for, will you accept another job? Yes (); No (). If yes, what other jobs that you are qualified for would you accept?

26. Are you registered with the Employment Exchange? Yes () ; No () . If yes, here in Pune? Yes () ; No () . For what job(s) are you registered?

27. If you live in the Pune area, and if we give you a job, will this job be very much further () , or very much nearer () , or about the same distance () from your current residence as your current/last job? If very much further, would you prefer to move your household to be nearer to your work? Yes () ; No () .
28. Are you now unemployed? Yes () ; No () . If yes, when did you leave your last job? _____
29. What is the name and address of your present or last employer?

30. When were you first employed there: _____
Month *Year*
31. What is (was) the name of your job there? _____

32. How much do (did) you earn there every month? _____
33. Would you call your job at an unskilled () , semi-skilled () , skilled () , supervisory () or clerical () level.
34. If you are (were last) working in a factory, what does it manufacture?

35. Are (were) you a permanent () , temporary () , or *badli* () , apprentice () employee there?

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n. = *in footnote*

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