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Education, Experience and Earnings in the Segmented Urban Labour Market : Evidence from Delhi, India

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Abstract

The 'conventional wisdom' as regards employment in the 1960s – that, in the long-run, the growth of wage employment in industry and services would be higher than that in agriculture and self-employment in developing countries, and that open unemployment would be a "luxury" to be enjoyed by the rich only – has been put into question by the weak performance of most of the developing countries during the past one and half decades. As an outcome of the economic downturn in the developed market economies in the 1980s, the emergence of "new poverty" in the form of open unemployment, particularly among the educated, both in developed and developing world, has proved that the 'luxury-unemployment hypothesis' is seriously flawed. Since beginning of the 1980s, coupled with the phenomenon of globalisation and liberalization, the world economic downturn has set in motion a process of "informalisation" or "marginalisation" of employment patterns in urban areas. Not only that the relative share of the industrial sector in total employment of these countries has been declining steadily over the years but also some types of occupations within the industrial sector have become extremely vulnerable. The structural adjustment programmes, in the absence of accompanying corrective labour market measures, have interacted strongly with the existing formal and informal labour institutions, leading to overall increase in the volume of unemployment in the developing countries. Further, with the expansion of the education sector during the past three decades, the incidence of open unemployment of the educated, particularly in the urban areas, has become more pronounced. The "interaction effect" of the adjustment programmes and labour institutions has been differentially shared by various categories of the labour force. The process has not only segmented the urban labour force but also pulled down the operational efficiency of the labour markets. Allocative and distributive criteria in the urban labour markets have undergone drastic changes.

Given the context of depressing world employment situation and the increasing credibility gap between the neoclassical solutions, and the nature and magnitude of the "new poverty", economists world over are currently giving more and more attention to understanding social institutions which influence the pattern of economic growth. Labour institutions (viz. wage systems, trade unions, labour market segmentation, etc.) are part of the social institutions, which strongly influence the nature of production processes and patterns of personal income distribution in any economy. Schooling, training and other similar qualifications, which are usually termed as social institutions, can well be recognised as labour institutions that affect the demand for and supply of labour, and level and process of economic growth and income distribution. Particularly, the level of market premium for human capital variables, such as educational achievements and years of labour market experience of individual workers in the urban labour markets, has changed over the years. Based on primary data and information collected through survey of sample small-scale manufacturing units in Delhi, the paper attempts to investigate into the structure of the labour market, and the determinants of personal earnings in the urban small-scale manufacturing sector in the segmented labour market framework.

EDUCATION, EXPERIENCE AND EARNINGS IN THE SEGMENTED URBAN LABOUR MARKET: EVIDENCE FROM DELHI, INDIA*

*Kamalakanta Biswal***

1. INTRODUCTION

During the 1960s the "conventional wisdom" as regards employment was that, in the long run, wage employment in industry and services would grow at a faster rate than employment in agriculture and self-employment in developing countries; and open unemployment would be a "luxury" to be enjoyed by rich only. Labour markets in developing countries would be sufficiently open and flexible to adjust to demand for and supply of work. In such a situation, open unemployment will be a reflection of search for better jobs by those able to finance high search costs (Turnham et al., 1990). The "conventional wisdom" has been put into question by the weak economic performance of most of the developing countries during the past two and half decades. The emergence of *"new poverty"* in the form of high open unemployment, particularly among educated, both in developing and developed world during the last three decades has proved that the luxury-unemployment hypothesis is seriously flawed and should be set aside. Poor, educated young adults, women, ethnic groups etc. are increasingly found in large numbers among the unemployed (OECD, 1993, 1996; ILO, 1996). Unemployment is no more a luxury to be enjoyed by rich only, poor and underprivileged worldwide have been badly affected by this phenomenon. In recent years, the number and the size of the "excluded" and the "unemployment-prone" groups are on the rise.

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The economic downturn in developed economies in the early 1980s has largely contributed to high growth of unemployment in developing countries. Coupled with the phenomenon of globalization and liberalization[1], the world economic downturn has set in motion a process of "informalization" or "marginalization" of employment patterns in urban areas (ILO, 1994). Since the beginning of the 1980s, there has been general deterioration of employment situation in most of the economies, and the relative "risk of unemployment" has gone up for all occupations in both industrialized and industrializing countries. Since then, the size of industrial employment has been declining even in absolute terms in some of the countries setting in motion a process of "de-industrialization" (ILO, 1995; Ginneken, 1988). Not only that the relative share of industrial sector in total employment of countries has been declining steadily over the years but also some types of occupations within the industrial sector have become extremely vulnerable. For example, in most countries, unskilled or semi-skilled production workers are more likely to become unemployed relative to technical and professional workers (Ginneken, 1988).

With the expansion of the education sector, size of the educated labour force has increased and there is also an increase in the average educational status of the labour force in many developing countries, including India. Employers are increasingly resorting to preferential hiring practices, i.e., very often they prefer workers with higher skills (signalled to them in the form of higher educational credentials) even if these skills are not strictly required for execution of particular job responsibilities. One of the striking trends in both developed and developing economies is that, during the last decade, not only the absolute volume of educated unemployment has gone up but also the average duration of unemployment has increased. Vulnerable groups, such as educated young people, women, immigrants, etc. are often subjected to multiple bouts of short-duration unemployment, particularly in the lower segments of urban labour markets. This behaviour of urban labour markets has given rise to the phenomenon of "scarring".[2]

In particular, industrializing economies, which have failed to generate enough employment opportunities, have visibly failed in restructuring and developing their agricultural sector. These economies have difficulty in retaining workers in the countryside, resulting in extremely high rate of rural-to-urban migration. The task of arresting this trend perhaps is becoming very difficult. Visibly underdeveloped agricultural sector in these countries has expanded the size of the industrial "reserve army" (often unskilled and semi-skilled job seekers), and also increased the magnitude of visible underemployment in urban areas. In recent years, rural and urban labour markets have been integrated. In other words, urban small scale firms are increasingly drawing their employees from rural areas, the impact of which has been reflected in declining real wages in both rural and urban areas (ILO, 1994).

In the 1980s and the early 1990s, many developing countries, including India, believing that economic liberalization policies have successfully solved the problem of chronic unemployment elsewhere, have attempted to restructure their industrial sectors. As a logical sequence, these economies have either maintained the existing level of public sector employment or have actually shed part of public sector employment in the name of rationalization in deployment of labour and minimization of wastage in public expenditures. In fact, during the initial years of adjustment, if size of public sector employment is squeezed, given the reluctance of private employers -- particularly in organized small-scale manufacturing and service sectors -- in hiring educated workers because of difficulty of laying down such workers under condition of unstable product markets, it usually leads to reduction in job security, real wages and mismatch of skills and occupational requirements in labour markets (Stevenson, 1992). In other words, in such a situation, the private sector ends up creating most vulnerable and marginalized employment opportunities. In an economy where there is already slack in the labour market (i.e. employers are not competing to hire services of new entrants to labour force), there is an obvious employment bias in favour of older workers, partly because the older workers have higher experience and the belief that these workers have already acquired good working habits.

Structural adjustment programmes, in the absence of accompanying corrective labour market measures, interact strongly with existing formal and informal labour "institutions"[3] and this may lead to increase in overall volume of unemployment in the country. In fact, the *"interaction effect"* of adjustment programmes and labour institutions may be differentially shared by various categories of labour force. The process not only segments the urban work force but also pulls down the level of efficiency in the labour market. Labour markets then operate at sub-optimal level. Allocative and distributive criteria in the labour market undergo drastic changes, and this process may take the economy completely away from the desired path of development designed at the time of introduction of economic reform programmes.

Given the above backdrop of depressing global employment situation and the increasing credibility gap between the neoclassical solutions and the nature and magnitude of 'new poverty', economists are now giving more and more attention to understanding social institutions which influence the pattern of economic growth. Labour institutions (viz. wage systems, trade unions, labour market segmentation) are part of social institutions, and these institutions do strongly influence the nature of production processes and patterns of personal income distribution in any economy. It is said that particular set of labour institutions can form and support a particular growth path (Boyer, 1994). Labour institutions vary in strength across different parts of the production system and of labour force, and perhaps this is a critical determinant of labour market segmentation and other forms of inequality (Rodgers, 1994). Schooling, training and qualifications which are usually termed as social institutions can well be recognized as labour institutions that affect the demand for and supply of labour, and level and process of growth and income distribution. Certain sets of labour institutions may promote *"social and economic exclusion"*. The "exclusion discourse", therefore, focuses much more on the way social and labour institutions interact with each other to create particular groups in the society which are excluded from each other as regards their relative social, economic and political power. The

exclusion discourse while analyzing the phenomenon of 'new poverty' emphasizes on role of social institutions that largely shape the nature and determine the relative strength of labour institutions (Silver, 1994).

Given the context, the paper makes a modest attempt to examine the significance of level of education as an explanatory variable of earnings in the segmented urban labour market in Delhi, India. This paper draws data and information from a firm level empirical study of the organized private small scale manufacturing sector in Delhi. The paper is broadly divided into five sections. Section two briefly discusses the evolution of economic thoughts on distribution of personal income as found in different established neoclassical and institutional theories. The basic theoretical propositions of the segmented labour market (SLM) theory have been summarized in section three. Section four discusses the context, data and methodology, the model and findings of the empirical study. In this section, the attempt is to identify determinants of earnings in different labour market segments, and to assess the relative influence of education on the distribution of personal income across labour market segments. In the fifth section, some of the implications of the study have been discussed.

2. ECONOMIC THOUGHTS ON DISTRIBUTION OF PERSONAL INCOME

The classical economists, assuming that full employment is a general case, argue that the primary function of the labour market is to ascertain the price of labour at a given point of time, depending upon the relative supply of and demand for labour. Given the assumptions of homogeneity of labour units and flexible wages, equilibrium in the labour market is then a general case and disequilibrium is a temporary aberration. In the neoclassical literature, the assumption of homogeneity of labour units has been dropped, and it is argued that the primary function of the labour market is to allocate and rationally adjust skills and labour demand so as to establish equilibrium wage rates. Others, such as the institutional and the neoinstitutional theorists, see that the labour market is segmented into distinct compartments and the social, structural and institutional factors in the labour market are

overwhelmingly important in determining relative wages. To these economists, in the presence of institutional and related factors, labour markets hardly establish equilibrium wage rates.

This section attempts to briefly review the theoretical explanations of the education-earnings relationship provided by various economic theories that some way or other deals with the issue of personal income distribution[4]. It is to be noted here that this section provides the theoretical context in which the study (discussed in sections four and five) has been carried out.

2.1 Economic Theories

Several economic theories have been developed during the present century that provide explanations of personal income distribution in general and education-earnings relationship in particular. These theories can be broadly classified into two categories : (i) neoclassical; and (ii) institutional. We are concerned with not all but some of the select neoclassical and institutional theories.

2.2 Neoclassical Theories

Some of the important neoclassical theories that deal with the issue of personal income distribution are : *(i) the ability theory; (ii) the stochastic theory; (iii) the individual choice theory; and (iv) the human capital theory.* Perhaps it is important here to mention that the main thrust of the neoclassical theories is the study of maximizing behaviour on the part of individuals and firms, and in the process they largely ignore the influences of endogenous changes in the tastes of individuals and the institutional framework of labour markets.

The ability theory (Galton, 1869; Keynes, 1949; Pigou, 1932; Miller, 1955) argues that differences in individual abilities and hence their productivities explain the earnings differentials between individuals. This theory, however, assumes that mental and physical abilities are distributed

normally. The theory was latter modified by Becker (1967) and Mincer (1970; 1976) who replaced innate ability by acquired human capital, such as formal education, training, experience etc. as the source of individual competency. It is also argued in the theory that genetic and environmental factors play a crucial role in the development of intelligence (Jensen, 1969; Coleman, 1966; Jencks, 1979; Jencks et al., 1972). Critiques are of the view that it is difficult to establish a true relationship between innate ability and productivity without treating schooling, informal human investments and earnings endogenously. Nurture (i.e. environment, parents' education etc.) rather than nature is the major influence behind ability (Sahota, 1978).

The stochastic theory (Gibrat, 1931; Mandelbrot, 1960, 1961; Jencks et al., 1972) relies entirely on the operation of laws of chance, luck and random occurrence in explaining skewed distribution of personal income. The theory does not consider human capital variables as important in explaining earnings variations. The theory is severally criticized on the ground that it relies too much on the stochastic elements and too little on economic and social factors underlying the distribution of personal income (Lydall, 1968).

The individual choice theory, which can well be regarded as the precursor of modern human capital theory, views everyone equal in terms of innate abilities and available opportunities to them. It argues that differences in personal income arise because of differences in individual decisions made freely and rationally in the labour market (Friedman, 1953; Johnson, 1973; Schultz, 1965). Observed inequalities of income are then illusory, and measurements of income inequalities do not directly reveal the underlying reality (Lydall, 1979). Individuals are confronted with various sets of choices and opportunities. Each set usually contains a particular combination of cash income and non-pecuniary advantages and certain profile of cash income over time. The theory may be criticized on the basis that it is too general and does not establish a clear-cut relationship between acquired characteristics of individuals and level of their personal income.

The human capital theory propounded by Schultz (1958; 1962), Becker (1962; 1964; 1965; 1967), Mincer (1957; 1958; 1960; 1962; 1976; 1977), Chiswick (1974), Psacharopoulos (1977; 1980) while providing the theoretical explanation of the education-earnings relationship emphasizes the productivity-augmentation role of education, and considers the demand for education as an investment demand. The thrust of the theory is that education increases cognitive skills which in turn raise the marginal productivity of an individual, and as more productive workers are paid more, increase in educational status of a worker leads to higher earnings in the labour market. Differences in personal earnings in the labour market arise because of variations in the amounts invested in individuals. The theory establishes a positive correlation between levels of education and earnings. As the theory is based on the marginal productivity theory of distribution, it therefore assumes perfect competition. The assumption of perfectly competitive labour market is rather a strong one, and therefore what the theory characterizes as higher levels of education involves some more factors. One such factor is that education creates barriers to entry in the labour market. In such a situation, earnings of the educated as revealed in the labour market reflect an element of monopoly rent (Balogh and Streeten, 1963). The theory, however, argues that this monopoly rent cannot continue in the long run because competition in the labour market will eventually eliminate it in the process of market clearance. Proponents of institutional theories criticize the human capital theory for assuming that the labour market is homogeneous. In other words, the theory assumes that the general laws of investment in and returns to human capital apply equally to all individuals in the labour market (Duberg, 1982). The human capital theory emphasizes too much on formal education and training as the major sources of earnings variations in the labour market. The emphasis is slightly reduced in some variations of the theory as discussed below.

The **screening** (Arrow, 1973) and the signalling (Spence, 1974) models which are variations of human capital theory hypothesize that increase in the level of education does not necessarily lead to an increase in the productive capabilities of individuals and hence their earnings. Rather

education serves as a 'credential' or 'signal' for the employer. This implies that education is considered as a measure of performance ability rather than an evidence of acquired skills. Education serves as a "screening device" in the labour market which sorts out individuals of different abilities and conveys such information to employers. This information then forms the basis to filter out the more productive from the less ones. The screening hypothesis argues that those who go for higher education are more talented and relatively more capable than those who do not. The role of education in the labour market, therefore, is to help employers to sort out the more talented for recruitment. Also individuals with higher abilities are interested in being sorted out for recruitment and are willing to invest more on a device (i.e. education) which labels their potentials and which enables them to "capture their ability rents" (Stiglitz, 1975).

The screening hypothesis partly differs from the human capital theory in the sense that it does not subscribe to the view that higher earning is necessarily caused by any skills developed by education. Perhaps empirical testing of screening hypothesis is more difficult than its theoretical differentiation with the human capital theory (Taubman and Wales, 1974; Layard and Psacharapoulos, 1974; Haspel, 1978).

The **signalling** or sorting model (Spence, 1973; Weiss, 1995) hypothesizes that hiring in the labour market is an investment under conditions of uncertainty. In order to determine the productivity of individual applicants, employers look for information regarding two types of attributes : (i) inherited characteristics, such as sex, race, ethnicity, etc. which are fixed; and (ii) acquired characteristics, such as years of schooling, length of labour market experience etc. which vary greatly between individuals. Given their past market experiences, employers decide about the productivity potential of individual applicants on the basis of their inherited characteristics, and the acquired characteristics, particularly 'education' serves as a signal in the labour market. The length of schooling is used by individuals to signal their ability to employers, and employers generally demand a minimum level of schooling from applicants in order to screen their workers. Education acting

as a 'signalling device' serves to sort workers according to their unobserved ability. Since firms do not know the abilities of applicants at the time of hiring, those which are in comparable positions with regard to schooling, experience and other related characteristics, are paid equally at the entry level. Later firms introduce performance based promotions and income on accomplishment. The signalling hypothesis, like the screening hypothesis, recognizes the positive correlation between education and earnings, but these hypotheses do not subscribe to the view that their exists a direct cause and effect relationship between education, productivity and earnings.

The signalling hypothesis differs from the screening hypothesis as regards feedback from the responses of employers. In the signalling hypothesis, the informed (i.e. students or applicants) move first, whereas in the screening hypothesis the uninformed (i.e. firms) move first (Weiss, 1995). The signalling model often has multiple equilibria; screening model suffers from the opposite problem of non-existence of equilibrium. The relationship between wages and education could be seen as the outcome of either students going for an education programme to signal their ability or students choosing education levels in response to the relative wage offers of firms, in which case wages would serve to screen workers.

2.3 Institutional Theories

During the last three decades, several institutional theories have been developed that attempt to explore the structure and functioning of labour markets, and the way benefits and losses of economic activities are shared between various groups in the society. The institutional theories argue that the neoclassical theories do not provide adequate explanation of dispersion of wages across workers, incidence of unemployment and causes of discrimination. In this context, Carnoy (1979) argues that "the human capital theory has problems explaining earnings differentials between men and women, Blacks and Whites, Indians and Creoles, Europeans and Natives and those from different social backgrounds with ostensibly the same amount of human capital investment (cited in Duberg, 1982).

To the institutionalists, rationalization and profit-maximization are no more the rules of the game in the labour market, rather institutional factors affect distributive and allocative functions of labour markets. Here, the attempt is to briefly review the main thoughts of : (i) the job competition theory; (ii) the dual labour market theory; and (iii) the Marxist theory of segmented labour market. The segmented labour market models have been critically assessed in the third Section of this paper.

The 'job competition model', which owes its origin to Thurow (1972; 1976) and Thurow and Lucas (1972), attempts to formalize the empirically observed phenomenon that despite education being more equally distributed among workers, their income is unequally distributed. The main elements of this model are : (a) the number and job slots are technically determined; (b) worker's skills and wage offers are nearly irrelevant in determining the number and types of job positions actually filled; (c) queues of workers for jobs offered at fixed wages constitute the supply of labour and employers' assessment of workers trainability and adaptability determines which workers are to be hired; and (d) fluctuations in macro policies will lead to changes in demand for labour and thus to changes in the length of the queues (Cain, 1975).

The major determinants of relative positions of individuals in the queue are education, age, sex, performance in psychological tests, previous experience, race, ethnicity etc. The theory argues that marginal productivity is largely an attribute of jobs not of people (Rumberger, 1978; Carnoy, 1979, 1980; Cain 1975). According to the model, education performs two important functions: it certifies the trainability of a prospective employee; and it, to a large extent, determines the relative position of the individual in the labour queue. Jobs of higher or lower income are distributed among prospective workers on the basis of their trainability and relative position in the queue. As skills are picked up on the job, trainability and training costs become important determinants of recruitment policy of firms. Higher levels of education can increase chances of access to a job, as levels of education of an individual and amount of training costs are inversely related to each other. Initially individuals having same level of education may get equal wages, but within

the labour market or the firm, their levels of earnings may vary depending upon the amount of skills acquired through on-the-job training.

The dual labour market theory (Doeringer and Piore, 1971; Piore, 1973) perceives the labour market being divided into two distinct segments, i.e., primary; and secondary. The primary labour market consists of jobs of "internal labour markets"[5] of large or profit-making firms and unionized jobs. Jobs in this segment offer better wages, security of employment, better promotion prospects and favourable working conditions. The secondary segment of the labour market is characterized by instability of employment, less pay and bad working conditions. Investment in human capital is less rewarded in the secondary labour market. Dualists argue that technological requirements shape the nature of jobs, and the requirements of jobs shape worker characteristics (Piore, 1973).

Primary market jobs are rationed, i.e., certain stigmatized groups find it difficult to obtain primary market jobs. Mechanisms of wages and employment determination in primary and secondary labour markets are different. Wages in the primary segment are determined within the framework of highly structured internal labour markets with individual's earnings being determined by their relative access to different job clusters (Doeringer and Piore, 1971). In other words, the wage a person gets depends not just upon his/her personal productivity but on the wage associated with the job he/she does. i.e., a wage determined historically by labour market custom. Institutional rather than market forces play the major part in the allocative and the distributive functions of the primary labour market. Wages in the secondary labour market are determined partly by the interaction of market forces and partly by employers' decision. Variations in productivity-related characteristics across workers in the secondary segment are not strongly reflected in variations in personal earnings.

In the dual labour market theory, the schooling-earnings relationship has been given relatively less importance than in orthodox theories, particularly in human capital theory. The theory hypothesizes that in the

primary labour market, there may exist a positive correlation between human capital variables and earnings. Earnings in the secondary market do not reflect variations in individual characteristics or capabilities, such as education, experience etc, since employees in this segment have equal productivity (as perceived by employers) and therefore do not reward human capital (Gordon, 1974; Watcher, 1974). Mobility between primary and secondary markets are extremely limited and controlled mainly by institutional factors. The theory considers workers in the secondary labour market as victims of the "culture of poverty". The dual labour market theory is ahistorical. Some of the propositions of this theory have not been empirically proved yet.[6]

The Marxist theory of segmented labour markets (or radical theory of SLM) perceive the labour market as being divided into multiple segments : (i) primary independent or creative; (ii) primary subordinate or routinized; and (iii) secondary (Gordon, 1972; Gordon, Reich and Edwards, 1973). The primary independent segment consists of jobs, which require creativity, and self-initiative action on the part of workers. Individual motivation and achievements are highly rewarded and work is judged and regulated by professional standards. Primary creative segment jobs are characterized by high degree of autonomy, and wages attached to these jobs are highest compared to that of jobs in other segments of the labour market.

Jobs in the primary subordinate segment of the labour market require conformity to externally imposed norms. These jobs are characterized by relative (to secondary segment jobs) stability, high wages rising with age or seniority. One of the refinements of the radical theory of segmented labour markets over the dual labour market theory is the implicit notion that the blue-collar workers of the primary subordinate segment have, to a large extent, similar qualifications and skills (productivity) as that of secondary segment workers of the dual labour market theory. The important variables separating them from the secondary labour market workers are their relative job stability and high wages.

Jobs in the secondary segment require the least on-the-job training and the minimum of general skills. These jobs do not lead to promotion ladders, usually are not unionized and offer low wages and poor 'circumstances of employment'.[7] Supervision and firing criteria are arbitrary and vary with the whims of the employer. The main characteristic, which distinguishes workers of this segment from workers of either of the primary segments, is the lack of stability in employment. Propositions of the Marxist theory of segmented labour markets are more or less the same as that of the dual labour market theory. The major difference lies in their explanation of the process of labour market segmentation. The radical segmented labour market theory provides the social control explanation of the process of segmentation. In this theory, the primary units of analysis are groups or classes who face objectively different labour market situations which systematically condition their tastes and restrict their range of effective choices. Segmentation here implies that the labour market is fragmented into persisting groups identifiable by rather permanent group characteristics (Carnoy, et al., 1980). To the radicals, *productivity is rooted in social and not in technical relations. The need to* reproduce the existing social relations of production limits the technological development. Technological changes are geared by the need to control production.

The segmented labour market theory (Doeringer and Piore, 1971; Piore, 1975; Carnoy and Rumberger, 1976) emphasizes on the socio-institutional factors as major determinants of access to different job clusters and levels of personal earnings. The theory argues that the correlations between education, experience and earnings do not necessarily establish that more education and experience contribute to higher productivity. The link between education and earnings is not through productivity but through socio-institutional factors. The theory agrees that there can be positive correlation between education and earnings in some segments of the labour market. But it does not accept the argument that higher earnings are due to higher levels of education. The theory as a whole treats institutions as an endogenous variable. Even some of the neo-institutionalists (Coase, 1960; Mathews, 1986) argue that the pattern of institutions that influence the allocative and

distributive functions of labour markets change overtime and new institutional patterns emerge in the labour market because they reduce costs, or because of other economic forces, often as a result of deliberate choices by economic agents, or because of the natural selection through competition (cited in Rodgers, 1994). The new patterns of institutions often change the existing structure of labour markets thereby influencing the mechanisms of access to employment, wage determination, and distribution of personal income.

We can conclude our discussion in this section by quoting Blaug's view on the evolution of the literature : "If we now add together the vital socialization function of schools, the 'screening hypothesis' in the sense of statistical discrimination, the concept of 'incomplete' employment contract, the phenomenon of 'internal labour market' and the notion of 'labour market segmentation', we arrive at a picture of the economic value of schooling that is simply miles removed from the old-fashioned belief that education makes workers more productive and that employers pay them more because they are more productive" (Blaug, 1975, p.25).

3. BASIC PROPOSITIONS OF SLM THEORY

It has been mentioned elsewhere in this paper that the major thrust of the neoclassical economics is on the maximizing behaviour on the part of firms and individuals. This has been questioned by the institutional economists, including the segmentation theorists. The Segemented Labour Market (SLM) literature on the other hand views labour market problems in a historical dynamic context. The SLM theory, by treating development of institutions as endogenous, tries to demonstrate that development and operation of institutions can take labour markets away from equilibrium.

The SLM theory consists of a number of overlapping models all of which share the most common hypothesis that labour markets are segmented and that problems of income distribution, unemployment and discrimination are results of that segmentation. At this point, it is perhaps important to mention that many critiques consider the SLM theory as an alternative

paradigm to the human capital model. We would, however, argue that the SLM theory does not contest the human capital theory, rather it supplements the neoclassical analysis of structure and functioning of labour markets. There are two basic reasons that back such an argument. First, though there exists some conceptual and methodological difference, many of the hypotheses of SLM models can be integrated into the neoclassical apparatus[8]. Second, in the empirical literature on SLM, often economists use the neoclassical tools to test the theoretical hypotheses of the SLM theory. For instance, the modified Mincerian earnings equation is most widely used in empirical works of the segmentation theorists. However, the SLM theory, which is rich in historical data on development of institutions and its effects on structure and functioning of labour markets, brings in important refinements in the analysis of problems of income distribution, unemployment and discrimination in dynamic contexts.

3.1 Concept of Internal Labour Market

Before specifying some of the common hypotheses of SLM models, perhaps it is important here to briefly discuss the functions of the "internal labour market" vis-a-vis problems of unequal income distribution, unemployment and discrimination. The concept of "internal labour market" is the building block of segmentation models. Existence of an internal labour market promotes a specific organizational structure that categorizes jobs as 'good' or 'bad' and ties each set of jobs together; specifies the entry requirements for each set of jobs; implicitly or explicitly lays down formal or informal rules and regulations that govern promotion procedures and job-specific training. In other words, internal labour markets create *'unique jobs'* that are separated from jobs of the external labour market by institutional rules, regulations and customs. There exists clear cut employment restrictions to good jobs of the primary segment and thus these jobs are largely free from the pressure from the external market. Workers already in a firm enjoy a certain degree of monopoly power that is either the result of the job-specific training or employment rights based on the implicit contract. The SLM theory argues that internal labour markets tend to substitute their own

formal and informal rules for market forces. Allocation of labour among primary segment jobs is done in an arbitrary manner, often without taking into consideration observable skill differences between individual workers. This indicates that internal labour markets do not always operate on the basis of efficiency criterion.

The Marxist version of the SLM theory argues that the existence of internal labour market in a firm or in an industry determines the relative political and economic power of employers and employees. To prevent workers from being unionized, internal labour market helps in setting in motion a process of "de-skilling" of workers. Firms sub-divide skills and narrow the expertise that any single worker or group of workers can acquire (Taubman and Wachter, 1986).

By creating employment restrictions to primary segment jobs, internal labour markets swell the labour supply in the secondary segment of the labour market, ultimately leading to high unemployment and under-employment of secondary segment workers. Good workers often end up working in dead-end bad secondary segment jobs. Here comes the issue of *"negative feedback"* which is crucial to the SLM theory (Vietorisz and Harrison, 1973). It is argued that those good workers who end up working in secondary segment jobs would over the period acquire bad working habits and behaviour associated with secondary segment employment. These workers would be treated as stigmatized groups largely unfit for primary segment employment. The negative feedback effect not only generates "scarring" but also imparts negative human capital in terms of work experience in the secondary segment of the labour market. Ultimately, this group of workers is trapped in the *'vicious circle of poverty'* implying lack of inter-segmental mobility.

3.2 Specific Hypotheses of SLM Theory

Given the above discussion, let us now specify some of the major hypotheses of the SLM theory. The central hypothesis of the SLM theory is that labour markets are segmented on various lines and that different reward

and incentive structures exist across segments. Specific hypotheses of the SLM theory are :

(i) That in the labour market, disadvantaged groups are crowded into secondary segment which consists of jobs having low wages, no upward career prospects, no security of employment, and bad working conditions. This is often referred to in the literature as the "dual labour market hypothesis".

(ii) That stigmatized groups with defined characteristics but who otherwise posses similar educational qualifications to those of non-stigmatized groups are crowded into the secondary segment to a greater extent than are the latter group. This is described as "anti-human capital" or 'job discrimination hypothesis'.

(iii) That stigmatized groups possessing similar qualifications as that of non-stigmatized groups and occupying similar jobs are paid significantly less than the latter and are also subject to insecure employment and bad working conditions. This is often referred to as "wage discrimination hypothesis".

(iv) That distinct mechanisms of wage determination exist in primary and secondary segments. Wages in the primary segment are set mostly on the basis of institutional rules, regulations and customs. In the secondary segment, market forces to a large extent influence the wage setting mechanism.

(v) That the secondary segment either does not reward human capital or provides significantly lower rate of return on additional units of human capital than is found in the primary segment. Profiles of earnings of secondary segment workers are relatively flatter compared to those of workers of the primary segment.

(vi) That there exists "negative feedback" between early labour market experience and later behaviour. That is "scarring" in the secondary segment increases the likelihood of future unemployment and/or low wage employment. The 'negative feedback effect' can well be considered as negative on-the-job training in the secondary segment, a fact that can, to a large extent, explain the persistence of dualism in the labour market.

(vii) That there are non-economic barriers that prevent at least some secondary segment workers from obtaining good primary segment jobs, and hence limit inter-segmental mobility.

In this paper, however, we are not concerned with empirically testing all hypotheses of the SLM theory. The empirical study reported in the following two sections tries to test the hypothesis that the coefficients of "levels of

education" and "years of work experience" in wage equations of primary and secondary labour market segments vary in magnitude, and generally are smaller in the secondary segment wage equation, thereby implying lower returns to education and experience.

Before we conclude our discussion in this section, perhaps it is important to mention two of the major criticisms labelled against the SLM theory. First, it is difficult, at least empirically, to establish distinct frontiers of various labour market segments. Second, the SLM literature has yet to develop an appropriate methodology so that the hypothesis concerning industrial dualism could be statistically tested (Taubman and Wachter, 1986).

4. THE STUDY

4.1 Context and Objectives

The present study involves field research in the National Capital Territory of Delhi, India. It is based on primary data and information on socio-economic, educational and labour market characteristics of employees and employers of selected organized private small-scale manufacturing units in Delhi, collected through field survey during the period January to April, 1996. The general objective of the study is to investigate into the structure of the labour market and determinants of earnings in the urban small scale manufacturing sector in Delhi in the SLM framework.

The study has been undertaken during a period when the Indian economy in general, and the industrial sector in particular, are in the early years of structural adjustment process. The structural reform programmes were introduced in the Indian economy in 1991, and by the second half of the 1990s the economy had been opened up to external investments. As a result, the long protected manufacturing firms were indirectly compelled to make their products competitive in the national as well as international markets, or else shut down. 'Competition' is the key word in the Indian industrial sector now. At the same time firms, which have been operating behind high tariff

walls (i.e. overprotected) for long, are finding it extremely difficult to cope up with the changed situation. The small scale manufacturing units have been most hard hit by the reform, despite being still largely protected by the government. In the post-reform period, it has become difficult on the part of many manufacturing firms to create and maintain stable markets for their products.

The *World Depression* of the early 1980s had strong adverse impact on growth of Indian economy, and the macro-economic crisis reached its peak in 1991, the year in which economic reform programmes were introduced. In 1991-92, almost all sectors of the economy, except services sector, experienced negative growth, and growth rate of GDP at factor cost was merely one per cent. By 1994-95, growth rate of GDP increased to 6.6 per cent (Central Statistical Organization, 1996). After nearly five years since the introduction of the reform programmes, the industrial sector started showing the signs of recovery. The growth rate of industrial sector in 1994-95 was 8.6 per cent which increased to 12 per cent during April-September, 1995. One of the disturbing trends is that since the early 1990s, a process of '*deindustrialisation*' of work force has been on in the Indian economy (Bhalla, 1996). Urban informal sector has expanded at a faster rate, and the work force is being increasingly 'marginalized'. Urban labour markets have become well integrated with rural labour markets. The phenomenon of large scale in-migration from rural to urban areas has swelled the existing "reserve army of unemployed".

Among all sectors of the economy, the performance of the manufacturing sector in terms of employment generation is not promising in the 1990s. Evidences based on data drawn from various sources [National Sample Survey Organization (NSSO) ; Directorate General of Employment and Training (DGE & T); Planning Commission of India; Economic Survey; and Central Statistical Organization (CSO)], show the slow growth of employment in the manufacturing sector. According to NSSO, the employment share of the manufacturing sector was only 11.5 per cent of total employment of 341.9 million in 1990-91. In urban India, the employment

share of the manufacturing sector to total employment declined from 26.5 per cent in 1972-73 to 25.8 per cent in 1990-91. Analysis of DGE & T data shows that over the period 1961 to 1993, share of employment in the organized public sector manufacturing industries to total employment increased marginally, whereas in the organized private sector. this share declined. In 1961, share of employment in public sector manufacturing industries to total employment in public sector was 5.23 per cent, which increased to 9.58 per cent in 1993. In the organized private sector, percentage share of employment in the manufacturing sector to total employment in private sector was 59.92 in 1961, which declined to 57.89 in 1993. According to the Planning Commission of India. the rate of growth of employment in the manufacturing sector was 3.7 per cent during the Eighth Plan period (1992-97), which was lower than the growth rates of employment in other sectors. except agricultural sector. Another disturbing trend is that growth rate of employment in private manufacturing sector has almost stagnated during the 1990s. Economic Survey (1996) reports that total employment in the organized private manufacturing sector was 44.81 lakh in 1991 which was 58.37 per cent of total employment in all industries in private sector. In 1994, total employment in the organized private manufacturing sector was 46.30 lakh. which was 58.39 per cent of employment in all industries in the private sector.

In India. unemployment is no more a *"luxury"* to be enjoyed by rich only. Increasingly. large number of poor and certain stigmatized groups. such as educated youth. women. socio-economically backward sections of the society. suffer from severe pains of unemployment. 'Scarring' is quite evident in Indian urban labour markets. Regular wage earners, however, constitute a fairly stable group in India and are little affected by the problem of unemployment (Turnham et al., 1990). Visible under-employment is high among the casual worker. It is argued that the magnitude of casual labour is the major threat to the development of Indian economy. It would be difficult to eliminate poverty as long as this category of workers is found in large

numbers in India. In India, the phenomenon of "labour market integration" and the magnitude of urban poverty are perhaps positively correlated with each other, *ceteris paribus*.

Briefly, given the structural adjustment programmes and the consequent labour market strategies in the nineties, India's unemployment, which stood at 23 million in 1992, could shoot up to 94 million by the year 2002. The expected future growth rate of employment in the country must be of the order of 2.6 to 2.8 per cent as against current growth rate of around 2.2 per cent in order to clear the backlog of unemployment.

Educated unemployment is another major problem in India. Relatively a large number of educated young people in the age group of 15-29 are found to be unemployed for a long time (Turnham et al., 1990). These are usually first time job-seekers in urban labour markets. It should be noted that reliable time series data on employment and unemployment of educated are not available in India. Whatever data are available from various sources such as Census of India, DGE & T, Ministry of Labour, University Grants Commission, Department of Education, Ministry of Human Resource Development, Planning Commission of India, National Sample Survey Organization, etc. provide rough trends of growth of education, employment and unemployment of the educated in the country. Given the data limitations, examination of patterns of educational expansion reveals that during the fifties and sixties, India witnessed high rates of growth at all levels of education, which was followed by declining rates of growth in the seventies and eighties. There are variations in the growth rates between levels and types of education, and in general, growth rates are higher at higher levels of education. Expansion at higher education level was mainly concentrated at the undergraduate level. Faculty-wise data on higher education indicate that a substantial portion of enrollment was in faculties like arts, science and commerce, and this trend still persists. Analysis of census data on educational level of population reveals that the percentage of secondary school graduates to total population is the highest compared to college and university graduates, and this percentage has substantially increased over the past three decades. The

percentage of educated females in total population has also gone up, and most of the highly educated are concentrated in urban India.

The average educational achievements of the population have increased and so also the educational composition of the labour force and the workforce. In 1970-71, only 6 per cent of total population were having 7-11 years of schooling which went up to 11 per cent in 1991 (IAMR, 1995). In 1972-73, the percentage shares of males and females having secondary level of education in total labour force in urban areas were 16.6 and 8.0 respectively which increased to 21.8 and 12.3 in 1987-88 (NSSO, 1994). Several macro level studies on employment patterns of educated show that the average educational qualifications of employees of all sectors have increased over the years.[9] This increase is more pronounced in the tertiary sector which employs relatively higher proportion of the educated. The manufacturing sector usually employs relatively more number of persons having education upto secondary level or below. Also, analysis of educational profiles of employees of both public and private sectors shows a higher preference towards highly educated manpower. Over the years, India has overproduced the educated persons, which in turn has given rise to the problem of "credential inflation"[10] (or overschooling). That is to say, as the educational system expands, given the structure of Indian labour markets and rigid wages, credential inflation leads to a process in which workers with higher educational qualifications crowd out those with less advanced credentials in successively less complex and well paid jobs. Studies in India have shown an inverted 'U'-shape relationship between levels of education and rates of unemployment, indicating that unemployment rate for secondary school graduates exceeds that of primary school leavers but declines again for university graduates (Blaug, 1973; Varghese, 1982). Obviously it is clear that, in Indian society, increasing demand for qualifications or devaluation of work potential has arisen in response to both generally higher educational level of the labour force and a relative decrease in the number of available jobs. This phenomenon in the labour market may imply that an increase in level of education may not necessarily lead to a particular type of job, but rather conditions (supply, demand, institutional etc.) in the labour market,

which by making educated participants to compete with each other, assign a higher or lower value to a particular educational level. The paradoxical situation of simultaneous devaluation and accumulation of degrees in Indian economy, which reflects narrowing opportunities and severe competition between young and adults in the labour market, aggravate social inequality as concerns employment.

In India, there is lack of coordination between the education sector and labour markets. No systematic information networking system has been developed yet. As a result, there is perhaps no manpower planning, except for scientific and technical manpower.

One of the typical characteristics of Indian urban labour market is that, in recent years, parts of the production processes are being increasingly sub-contracted out to even un-organized sectors. This has resulted in the growth of temporary help industries or "call-ins". Part-time employment has increased, and employment contracts are becoming more informalized. There has been a drastic change in the patterns of development of labour institutions. With the integration of rural labour markets with urban labour markets, the access patterns to various jobs have changed, and the role of "intermediaries" in the process has become very important. Economic reform programmes have also attempted to deregulate labour markets. Though such a move has brought about some degree of flexibility in the operation of labour markets, underlying rigid informal labour institutions have not been very much affected.

Given the poor performance of the Indian economy in the early 1990s, high rates of unemployment among various categories of labour force, particularly among educated young adults, steady deceleration of employment in the manufacturing sector, high rural-urban migration, and recent changes in economic policies, patterns of access to various types of employment, the task of measuring returns to different levels of education has become complex over the years. There is little information available about the nature of jobs being created in the urban manufacturing sector during the 1990s, access

patterns to these jobs, and characteristics of persons gaining access to such jobs. At this stage of development of urban labour markets, micro level studies examining the structure and functioning of labour markets perhaps may provide useful clues for effective educational and manpower planning in India.

In the above context, the study has the following specific objectives :

(i) To place jobs/occupations of sample manufacturing units/firms in distinct labour market segments (i.e. primary independent, primary subordinate, and secondary) on the basis of some reliable criteria such as worker characteristics, like educational achievements and/or job characteristics like protection and/or autonomy of employment. This is the necessary condition to demonstrate that the labour market of the manufacturing sector is divided into segments having distinct characteristic features.

(ii) To examine the characteristics of labour market segments in terms of type and nature of jobs, socio-economic, educational and labour market characteristics of workers, patterns of information and access to first job and current job, and labour market outcomes, including the phenomenon of 'scarring' in the secondary segment.

(iii) To test for the existence of segmented labour markets in the sample manufacturing sector by estimating separate earnings equations for primary and secondary segments to find out whether the earnings equations are different in terms of explanatory variables. If we find that the earnings equations are different, and if the size of the coefficients of common explanatory variables in both the earnings equations differ, we can safely conclude that the labour market is divided into distinct segments each having different determinants of earnings. This is perhaps the sufficient condition to demonstrate that the labour market is divided into separate compartments.

(iv) To examine the education-earnings relationship in each segment of the labour market. The attempt is to find out whether level of education is an important predictor of personal earnings in the secondary segment of the labour market. If it is found that level of education of the worker is not important in explaining earnings variations in the secondary segment, whereas it is in the primary segment, it would confirm one of the important propositions of the segmented labour market theory that education of the worker has no or lower market premium in the secondary segment of the urban labour market.

4.2 Data and Methodology

The study builds its data and information base from the census survey of employees and employers of 11 registered private manufacturing factories[11] in Delhi selected through a two-stage sampling method. The list of registered private manufacturing units was available with the office of the Chief Inspector of Factories, Government of National Capital Territory of Delhi. In the first stage of the sampling process, 77 manufacturing units were randomly selected on the criterion of 1/100 units. In the second stage, 11 manufacturing units/firms were finally selected for field survey by using lottery method. These 11 firms are located in different industrial areas in Delhi, and are producing different products. Total number of employees, including working proprietors, of these 11 firms was 426. During the field survey, it was found that 13 employees of these firms were on long leave, and therefore they could not be interviewed. Finally, the sample size of the study included 413 employees of 11 registered working manufacturing firms in Delhi.

Data and information were then collected through personal interviews, using structured questionnaires both for employees and employers. Also, personal discussions with the proprietors of selected firms and consultation of relevant firm level documents were useful in gathering vital information. The schedule for the employees included questions seeking information on various aspects of the employee's labour market status, experience and behaviour, including his/her socio-economic and educational background. The schedule for the proprietor had questions seeking information on the socio-economic backgrounds details about the size of the unit in terms of number of employees and annual turnover in Indian rupees, starting year of operation of the unit, composition of its work force, number of migrant workers, preference for specific category of employees, conditions of employment, wages and benefits available to employees and market share of the product of the unit.

In empirical studies attempting to test for the existence of segmented labour markets, some criteria like income or some other measure of the social

and economic status of an occupation, are used to divide sample population into separate segments or sub-markets. Criteria of segmentation vary greatly across empirical studies, both in developed and developing economies. Some have used median earnings in current occupations (Andrisani, 1973), while some others use occupational gradation scales (Rosenberg, 1975), educational backgrounds of workers, their personal characteristics, job characteristics, type of industry (Carnoy and Rumberger, 1976; Carnoy, Girling and Rumberger, 1976), and even personal judgments (Osterman, 1975) to place workers in various labour market segments. In developing country studies, some have used mean earnings in the current job (Liu, 1975), job characteristics and occupational grading scale (Velloso, 1975), degree of effective protection of firms in the economy from international competition (Uthoff, 1986), and educational requirements of jobs (Clignets, 1976), as the basis for dividing the labour market into multiple segments. In most studies undertaken in developing countries, human capital characteristics, particularly years of schooling, are taken as the basis for dividing the sample into distinct segments, whereas in developed country studies the emphasis is on job characteristics.

In the present study, (i) median years of schooling; and (ii) current job characteristics in terms of 'degree of protection' and 'autonomy' of decision-making have been used as main criteria for dividing the sample into multiple segments, i.e., (a) primary independent; (b) primary subordinate; and (c) secondary. In the sample, broadly there are two types of "employment contract" -- (i) written agreement; and (ii) oral agreement. Workers having 'written agreement' of employment are the protected ones whereas workers having 'oral agreement' of employment constitute the most vulnerable group subject to arbitrary hiring and firing practices. The 'median years of schooling' of sample workers is 10.0. Initially, workers having "written agreement of employment" and educational qualifications equal to or above 10 years of schooling were placed in the primary segment. Workers having "oral agreement of employment" and educational qualifications equal to or below 10 years of schooling were placed in the secondary segment. The primary segment was divided into primary independent and primary routinized

segments on the basis of "relative degree of autonomy of decision-making" enjoyed by individual workers. Those enjoying full or near full autonomy of decision-making constitute the primary independent or creative segment, and those having little or no autonomy of decision-making have been placed in the primary routinized segment. Finally, the primary independent labour market segment consists of jobs having full or near full autonomy of decision-making, written agreement of employment and educational qualifications of workers equal to or above 10 years of schooling. Jobs in the primary subordinate segment have written agreement of employment, little or no autonomy of decision-making and worker qualifications equal to or above 10 years of schooling. Secondary segment jobs are characterized by "oral agreement of employment" and educational qualifications of workers equal to or below 10 years of schooling. The results of this exercise show that, out of 413 employees, 16 fall in the primary independent segment which is 3.9 per cent of the total sample; 100 acquire the status of primary subordinate segment job holders (24.2 per cent of the total sample); and 297 become secondary segment workers, which is 71.9 per cent of the total sample employees.

The study makes use of descriptive statistics and multivariate analysis for the purpose of data analysis. Frequency and cross-tabulations, mean, median, standard deviation etc. have been used to examine nature and characteristics of the manufacturing labour market in general, and its various segments. An empirical model based on the theoretical constructs of various theories of personal income distribution (discussed in section 2 of this paper) has been used to examine the determinants of earnings in different labour market segments. Specifically, modified Mincerian earnings function has been estimated to look into the reward structure in each labour market segment of the organized private manufacturing sector in Delhi.

4.3 The Empirical Model

The empirical model is based on the modified Mincerian earnings function. This modified version takes into consideration the explanatory variables emaciating from the theoretical constructs of major theories of

income distribution. In a way, the model can be termed as exploratory. The exploratory approach, besides considering basic 'human capital variables' such as 'years of schooling' and 'years of labour market experience', includes any such variable that may be expected to influence earnings (Blaug, 1974; Psacharapoulos, 1977). According to this exploratory approach, variables relating to worker's personal characteristics, socio-economic background, occupational characteristics, labour market conditions, characteristics of firms and employers, and geographical conditions can be considered as independent variables in the earnings function. The general model of earnings function used in this study is as follows :

Y_i = f (HP, QS, FB, SB, OL, FC, GL), where,

Y_i refers to the monthly total earnings from current job held;

HP refers to the vector of human capital variables and other personal characteristics;

QS refers to the vector of variables relating to quality of schooling;

FB refers to the vector of variables related to the family background;

SB refers to vector of variables representing the social background;

OL refers to the vector of variables pertaining to occupation and the labour market;

FC refer to the vector of variables relating to the characteristics of the firm; and

GL refers to variables explaining the geographical condition of residence of the worker.

The specific model is a linear multivariate function with continuous or dummy variables. The specific model is :

$$Y_{ij} = a_o + b_1X_{1j} + b_2X_{2j} + ... + b_nX_{nj} + U_j .$$

where, j stands for an individual worker, Y_i is the continuous dependent variable representing total monthly earnings before tax of the worker, X_{ij} ..... X_{nj} are n independent variables, continuous or dummy, a_o and b_1..... b_n are

parameters to be estimated. and U_j is the random component (unobserved disturbances).

In the model. we have specified earnings functions in the semi-logarithmic form. This has some definite advantages. Often income distributions are found to be approximately log-normally distributed. The semi-logarithmic form of earnings function provides a better fit than other functional forms involving the same explanatory variables. The human capital theoretic reasoning itself argues for semi-logarithmic form since the investment cost of schooling and post-schooling are treated in time-equivalent values. The use of semi-logarithmic form enables interpreting the regression coefficients as the percentage effect of a unit change in the explanatory variable on earnings (Mincer. 1975; Becker and Chiswick. 1966; Snooks. 1983; Fields. 1980; Blaug. 1987).

For the purpose of running regressions we have clubbed primary *independent and primary subordinate segments together. thereby raising the* size of the primary segment to 116, and as has already been mentioned. the secondary segment has 297 workers. We have then estimated separate earnings functions for each labour market segment and for the entire sample in an attempt to find out the best statistical explanation of total personal earnings.

The earnings function. which has been estimated for the whole sample. is :

$$\ln Y^{w}_{ij} = a_o + \sum_{i=1}^{n} b^{w}_{ij} X_{ij} + U_j.$$

where, the dependent variable 'ln Y_i' is the 'log of total monthly earnings' before tax on current job of the sample worker. It also includes all types of payments, such as overtime allowances, incentive bonus, etc.

The earnings function, which has been estimated for the secondary segment, is :

$$\ln Y^{s}_{ij} = a_o + \sum_{i=1}^{n} b^{s}_{ij} X_{ij} + U_j$$

where, 'ln Y_i' is the 'log of total monthly earnings' before tax of the secondary segment worker.

Similarly, the earnings function for the primary segment is :

$$\ln Y^{P}_{ij} = a_o + \sum_{i=1}^{n} b^{p}_{ij} X_{ij} + U_j,$$

where, 'ln Y_i' is 'log of total monthly earnings' before tax of the primary segment worker.

The key variables used in the empirical model have been given in Table 4.1. These variables have been measured in different ways, and that number and types of variables used in different regressions are different.

Table 4.1 **Definitions of Key Variables**

Variable Name	Value Label/Definition
Age (E2)	Measured in years
Sex (E3)	0 = male 1 = female
Caste (E5)	*Dummy Variables* C1 = 1 if backward caste, 0 if otherwise; C2 = 1 if higher caste, 0 if otherwise; excluded category is Scheduled Caste
Religion (E6)	*Dummy Variables* R1 = 1 if Hindu, 0 if otherwise; R2 = 1 if Muslim, 0 if otherwise; excluded category is Christian
Marital status (E8)	0 = unmarried 1 = married
Family size (E10)	Measured in total number of members in the family, including the respondent
Place of origin (E15)	0 = rural 1 = urban
Parents' education (PAEDU)	Measured in years of schooling of both father and mother
Father's occupation (FAOCC)	*Dummy Variables* F1 = 1 if cultivator, 0 if otherwise; F2 = 1 if manual worker, 0 if otherwise; F3 = 1 if petty shopkeeper, 0 if otherwise; F4 = 1 if skilled worker, 0 if otherwise; F5 = 1 if clerical and related worker, 0 if otherwise; F6 = 1 if administrative or professional worker, 0 if otherwise; excluded category is unclassified workers

Average annual family income (E21)	Measured in thousands of rupees & includes income of all the earning members in the family, except that of the individual worker
Place of schooling (E22)	0 = no schooling 1 = rural 2 = urban
Educational achievement (E25A) of the worker	Measured in years of schooling
Education squared	Square of E25A
Vocational educational (E26) Achievement	Measured in years of vocational schooling
Vocational education squared (VEDNQ)	Square of E26
Mode of entry to 1st job (FJMODE)	0 = informal channel of entry or selection 1 = formal channel of entry or selection
First job of the worker (E29)	J1 = 1 if unskilled manual worker, 0 if otherwise; J2 = 1 if skilled worker, 0 if otherwise; J3 = 1 if clerical and related worker, 0 if otherwise; J4 = 1 if supervisor, 0 if otherwise; J5 = 1 if technical or professional worker, 0 if otherwise; J6 = 1 if sales worker, 0 if otherwise; excluded category is proprietors
Average number of hours worked daily (E54)	Measured in number of hours worked daily
On-the-job training facility on the current job (E57)	0 = no 1 = yes
Job changes of relative stability of employment (V4)	1 = first job is current job 2 = changed job twice 3 = changed job thrice 4 = changed job 4 times 5 = changed job 5 times 6 = changed job 6 times
Labour market structure (V6)	0 = secondary segment 1 = primary segment (i e primary independent segment plus primary routinized/subordinate segment)
Labour market experience (LMX)	Measured in actual years of labour market experience in all the jobs held by the individual worker
Labour market experience squared (LMEXQ)	Square of LMEX
Firm size (P11)	Measured in terms of total annual turnover of the firm in rupees (in lakhs) (1 lakh = 100 thousand)

4.4 Empirical Findings

In the empirical analysis, we have estimated various earnings functions by stepwise regression procedure, using the Statistical Package for Social Sciences (SPSS) computer programme. Before running the regressions, we have calculated arithmetic means and standard deviations of all independent variables, and the simple Pearson's correlation coefficients between all pairs

of variables, including the dependent variable. Some of the variables used in the correlation analysis are categorical. In this case, perhaps one can also calculate the correlation matrix using polychoric or polyserial correlation method. Before reaching at the final regression equations for each labour market segment and for the sample workers, we have checked for high correlation among independent variables, and selected the explanatory variables of each equation carefully. This is performed to identify the highly correlated explanatory variables to avoid multicollinearity by dropping one of them from the model. Usually, the variable which has less correlation with the variable dependent to be explained is dropped. For each individual labour market segment and for the entire sample, we have estimated several alternative regressions, and finally reached at three regressions -- one each for the primary segment, secondary segment, and the entire sample -- which provide best statistical explanations of variations in earnings. We have estimated several alternative regressions because of the fact that many of the independent variables considered in different regressions are highly correlated to each other. Running of alternative regressions helped to differentiate and establish the actual contribution of the independent variables to earnings variations among workers. All regression models attempted here are highly significant and confirm to partial F-test with 95 per cent confidence limit. In the following sub-sections an attempt has been made to discuss the main findings about the characteristics of the sample in general and individual segments in particular, and determinants of earnings in each labour market segment and in the entire sample.

(a) *Characteristics of the Sample and Its Segments*

The sample manufacturing firms are located in different industrial clusters in Delhi, and are owned by males. Out of 11 firms selected for the study, 9 are owner-managed (i.e., proprietors of these firms are working managers), and 2 are managed by salaried professionals. Most of these firms became operational during the 1980s, and they manufacture products, such as tractor spare parts, office furniture, leather garments, plastic trolly wheels, corrugated cardboard boxes, melamine powder, apparels and electric control

panel boards. The size of these firms in terms of total number of employees vary between a minimum of 15 and a maximum of 80, and the annual business turnover ranges from Rupees 10 lakhs of the smallest firm to Rupees 5 crores of the largest firm (see Table 4.2). All these firms employ migrant workers in large numbers, and these migrant workers are mainly crowded into shopfloor production-line jobs. These firms have structured internal labour markets having visible patterns of job hierarchy in terms of wages attached to different types of jobs and conditions under which these jobs are carried out. All firms operate under conditions of competitive product market.

Table 4.2 : **Descriptive statistics of age of the proprietor, total employees and annual business turnover of the sample manufacturing firms**

Variable	Mean	Std Dev	Maximum	Minimum	N
Age of the proprietor	44.09	12.15	34	75	11
Employment size of the firm	37.73	17.65	15	80	11
Annual turnover (Rs. in lakhs)	151.73	154.77	10	500	11
Employment of migrant workers	31.36	15.70	11	65	11

Source : Field Survey.

Table 4.3 **Distribution of employees by sex and by job category**

Sl. No.	Job Category	Male	Female	Total
1.	Managerial and executive	16	0	16
		(100.0)	(0.0)	(3.8)
2.	Technical and professional	29	0	29
		(100.0)	(0.0)	(6.8)
3.	Supervisory	19	0	19
		(100.0)	(0.0)	(4.5)
4.	Sales	19	0	19
		(100.0)	(0.0)	(4.5)
5.	Skilled	138	0	138
		(100.0)	(0.0)	(32.4)
6.	Administrative, clerical etc.	14	17	31
		(45.2)	(54.8)	(7.3)
7.	Unskilled manual	162	12	174
		(93.1)	(6.9)	(40.8)
	Total	397	29	426
		(93.2)	(6.8)	(100.0)

Source : Field Survey.
Note : Figures in brackets indicate percentages of total.

Table 4.4 : **Current job by age (in years)**

Frequency row pct col pct	Below 14	15-24	25-34	35-44	45-54	55 & above	Row Total
Unskilled manual worker	1 0.6 33.3	65 39.9 48.1	87 53.4 39.4	10 6.1 21.7	0 0.0 0.0	0 0.0 0.0	163 39.5
Administrative, clerical and related worker	0 0.0 0.0	9 29.0 6.7	20 64.5 9.0	2 6.5 4.3	0 0.0 0.0	0 0.0 0.0	31 7.5
Skilled worker	2 1.5 66.7	49 36.6 36.6	69 51.5 31.2	13 9.7 28.3	1 0.7 14.3	0 0.0 0.0	134 32.4
Sales worker	0 0.0 0.0	0 0.0 0.0	19 100.0 8.6	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	19 4.8
Supervisory and related worker	0 0.0 0.0	3 15.0 2.2	7 35.0 3.2	7 35.0 15.2	3 15.0 42.9	0 0.0 0.0	20 4.8
Technical & professional worker	0 0.0 0.0	8 24.2 5.7	17 51.5 7.7	8 24.2 17.4	0 0.0 0.0	0 0.0 0.0	33 8.0
Working proprietors, managers, directors, executives etc.	0 0.0 0.0	1 7.7 0.7	2 15.4 0.9	6 46.2 13.0	3 23.1 42.9	1 7.7 100.0	13 3.1
Column Total	3 0.7	135 32.7	221 53.5	46 11.1	7 1.7	1 0.2	413 100.0

The employment pattern in these firms shows a definite preference for male workers (see Tables 4.3 & 4.4). The size of the workforce employed in the shopfloor production-line jobs is the largest. The workforce of these firms consists of relatively a large number of young workers in the age group of 15-34. Most of these workers belong to higher caste rural families, and the number of lower caste workers who have their place of origin in rural areas is few and they are mostly concentrated in production-line jobs (see Table 4.5). Ninety-three per cent of all workers are Hindus (see Table 4.6). A large number of workers have come from joint families having equal to or less than 10 members. The share of married workers in total workers of these firms is quite high, and among all migrant workers, nearly 95 per cent are individual migrants.

Around 96 per cent of all workers have unemployed spouse, and 70 per cent have only one earning member in the family. Majority of workers have low parental educational and occupational status. Father's occupation of most of the migrant workers is agriculture. A large number of workers do not have sound economic background, which is reflected in their low average annual family income (see Tables 4.7 & 4.8).

Table 4.5 : **Current job by caste**

Frequency **row pct** **col pct**	**Scheduled Caste**	**Backward Caste**	**Higher Caste**	**Row Total**
Unskilled manual worker	20	41	102	163
	12.3	25.2	62.6	39.5
	57.1	44.1	35.8	
Administrative, clerical	0	1	30	31
and related worker	0.0	3.2	96.8	7.5
	0.0	1.1	10.5	
Skilled worker	15	42	77	134
	11.2	31.3	57.5	32.4
	42.9	45.2	27.0	
Sales worker	0	0	19	19
	0.0	0.0	100.0	4.6
	0.0	0.0	6.4	
Supervisory and related	0	3	17	20
worker	0.0	15.0	85.0	4.8
	0.0	3.2	6.0	
Technical &	0	6	27	33
professional worker	0.0	18.2	81.8	8.0
	0.0	6.5	9.5	
Working proprietors,	0	0	13	13
managers, directors,	0.0	0.0	100.0	3.1
executives etc	0.0	0.0	4.6	
Column Total	35	93	285	413
	8.5	22.5	69.0	100.0

Nearly 80 per cent of employees are found in production line jobs, out of which the share of unskilled manual workers is the highest, followed by the share of skilled workers having firm specific skills. Young workers are mostly concentrated in production line, clerical and related jobs, and older workers are found in better paid protected jobs. Female workers are found in clerical and related jobs and unskilled manual jobs.

Table 4.6 : **Current job by religion**

Frequency **row pct** **col pct**	**Hindu**	**Muslim**	**Christian**	**Row Total**
Unskilled manual worker	161 98.8 43.2	2 1.2 6.3	0 0.0 0.0	163 39.5
Administrative, clerical and related worker	27 87.1 7.2	1 3.2 3.1	3 9.7 37.5	31 7.5
Skilled worker	106 79.1 28.4	28 20.9 87.5	0 0.0 0.0	134 32.4
Sales worker	17 89.5 4.6	0 0.0 0.0	2 10.5 25.0	19 4.6
Supervisory and related worker	19 95.0 5.1	1 5.0 3.1	0 0.0 0.0	20 4.8
Technical & professional worker	31 93.9 8.3	0 0.0 0.0	2 6.1 25.0	33 8.0
Working proprietors, managers, directors, executives etc.	12 92.3 3.2	0 0.0 0.0	1 7.7 12.5	13 3.1
Column Total	373 90.3	32 7.7	8 1.9	413 100.0

Table 4.7 : **Distribution of workers by occupational status of parents**

Sl. No.	**Name of the Occupation**	**Father**	**Mother**
1.	Non-worker	16 (3.9)	-
2.	Cultivator	213 (51.6)	-
3.	Agricultural labour	48 (11.6)	-
4.	Businessman	12 (2.9)	-
5.	Shopkeeper	25 (6.1)	-
6.	School teacher	20 (4.8)	1 (0.2)
7.	Technical worker	2 (0.5)	-
8.	Skilled worker	36 (8.7)	-
9.	Unskilled worker	9 (2.2)	-
10.	Clerical and related worker	27 (6.5)	-
11.	Administrative & managerial worker	4 (1.0)	-
12.	Professional like lawyer, engineer, etc.	1 (0.2)	-
13.	Householder	0	412 (98.0)
	Total (all occupations)	413	413
		(100.0)	(100.0)

Source : Field Survey.
Note : Figures in parentheses show percentages to total.

Higher caste workers dominate the labour market of the manufacturing sector in Delhi. The managerial, executive and professional jobs in the sample are held by higher caste persons. Though Hindus are found in almost all categories of jobs, Muslims are concentrated in skilled jobs. Majority of unmarried workers having rural origin are found in skilled and unskilled occupations. A large number of skilled and unskilled manual workers have relatively larger families, and most of these workers have one earning member in the family. The average annual family income of skilled and unskilled workers is lower compared to that of other categories of workers. Father's educational and occupational status is directly related to the occupational status of workers. Workers in better paid secure jobs have higher parental educational and occupational status compared to that of workers in lower paid unstable jobs, such as skilled and unskilled manual.

Table 4.8 : **Current job by average annual family income (in Rs. '000)**

Frequency row pct col pct	Below 10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 & above	Row Total
Unskilled manual worker	109	39	7	4	4	0	0	0	0	0	0	163
	66.9	23.9	4.3	2.5	2.5	0.0	0.0	0.0	0.0	0.0	0.0	39.5
	54.8	47.6	23.3	10.5	10.5	0.0	0.0	0.0	0.0	0.0	0.0	
Administrative, clerical and related worker	1	1	1	6	10	4	2	4	1	0	1	31
	3.2	3.2	3.2	19.4	32.3	12.9	6.5	12.9	3.2	0.0	3.2	7.5
	0.5	1.2	3.3	26.1	26.3	40.0	50.0	57.1	50.0	0.0	7.7	
Skilled worker	73	34	17	5	1	1	1	1	0	0	1	134
	54.5	25.4	12.7	3.7	0.7	0.7	0.7	0.7	0.0	0.0	0.7	32.4
	36.7	41.5	56.7	21.7	2.6	10.0	25.0	14.3	0.0	0.0	7.7	
Sales worker	1	0	1	1	9	4	1	0	0	1	1	19
	5.3	0.0	5.3	5.3	47.4	21.1	5.3	0.0	0.0	5.3	5.3	4.6
	0.5	0.0	5.3	5.3	23.7	40.0	25.0	0.0	0.0	20.0	7.7	
Supervisory and related worker	7	3	1	2	2	0	0	2	1	2	0	20
	35.0	15.0	5.0	10.0	10.0	0.0	0.0	10.0	5.0	10.0	0.0	4.8
	3.5	3.7	3.3	8.7	5.3	0.0	0.0	28.6	50.0	40.0	0.0	
Technical & professional worker	8	4	3	4	9	1	0	0	0	1	3	33
	24.2	12.1	9.1	12.1	27.3	3.0	0.0	0.0	0.0	3.0	9.1	8.0
	4.0	4.9	10.0	17.4	23.7	10.0	0.0	0.0	0.0	20.0	23.1	
Working proprietors, managers, directors, executives etc.	0	1	0	1	3	0	0	0	0	1	7	13
	0.0	7.7	0.0	7.7	23.1	0.0	0.0	0.0	0.0	7.7	53.8	3.1
	0.0	1.2	0.0	4.3	4.3	0.0	0.0	0.0	0.0	2.0	53.8	
Column Total	199	82	30	23	38	10	4	7	2	5	13	413
	48.2	19.9	7.3	5.6	9.2	2.4	1.0	1.7	0.5	1.2	3.1	100.0

Ninety-six per cent of workers are educated, and their educational achievements vary between primary (5 years of schooling) and post-graduation (17 years of schooling) level (see Tables 4.9 & 4.10). All these workers have their school education from government schools where

vernacular language is the medium of instructions. More than 75 per cent of workers have their schooling from rural government schools. Nearly 32.2 per cent have education below secondary level; 36.6 per cent have been schooled upto secondary level; and 14.5 per cent have educational achievements equal to or more than degree level. Only 20 per cent have some sort of technical or professional degree.

There exists a direct relationship between job hierarchy of firms and levels of educational attainment of workers. Workers in relatively better paid secure jobs have educational achievements equal to or more than secondary level, whereas workers in lower paid unprotected jobs, such as skilled and unskilled manual, have education equal to or less than secondary level. All the uneducated workers are found in skilled and unskilled occupations, and no worker in skilled or unskilled manual job has any formal technical or professional certificate or degree.

Around 50 per cent of workers are first time entrants to the labour market -- i.e. their current job is their first job. The rest have changed their jobs more than once, up to a maximum of six times. There is a limited degree of occupational mobility in the urban manufacturing labour market, and young workers are subject to multiple bouts of short term unemployment. Labour market experience of sample workers ranges between 5 months and 32 years and 4 months, and average length of work experience of the sample population is 5 years and 2 months. There exists extreme variations in work experience of sample workers (see Table 4.11). Except skilled workers, all other categories of workers are relatively stable having less number of job changes. Working proprietors, managers, executives etc. are the most experienced group followed by administrative, clerical and related workers, supervisory and related workers, and skilled workers. Unskilled manual workers have the lowest labour market experience compared to that of all other categories of workers.

Table 4.9 : **Current job by educational status of workers**

Frequency row pct col pct	No schooling	Primary	Upper primary & below matric	Matric	Under-graduate	Graduate	Post-graduate	Row Total
Unskilled manual worker	8 4.9 50.0	47 28.8 56.0	41 25.2 55.4	65 39.9 43.0	0 0.0 0.0	2 1.2 3.4	0 0.0 0.0	163 39.5
Administrative, clerical and related worker	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	9 29.0 32.1	22 71.0 37.3	0 0.0 0.0	31 7.5
Skilled worker	8 6.0 50.0	37 27.6 44.0	33 24.6 44.6	51 38.1 33.8	5 3.7 17.9	0 0.0 0.0	0 0.0 0.0	134 32.4
Sales worker	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	1 5.3 3.6	18 94.7 30.5	0 0.0 0.0	19 4.6
Supervisory and related worker	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	10 50.0 6.6	5 25.0 17.9	5 25.0 8.5	0 0.0 0.0	20 4.8
Technical & professional worker	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	25 75.8 16.6	7 21.2 25.0	1 3.0 1.7	0 0.0 0.0	33 8.0
Working proprietors, managers directors, executives etc	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	1 7.7 3.6	11 84.6 18.6	1 7.7 100.0	13 3.1
Column Total	16 3.9	84 20.3	74 17.9	151 36.6	28 6.8	59 14.3	1 0.2	413 100.0

Table 4.10 **Current job by technical and professional educational status**

Frequency row pct col pct	No Tech/ Prof. education	Certificate in tech/prof. subjects	Technical diploma	Professional diploma	Graduation in tech. subjects	Graduation in professional subjects	Row Total
Unskilled manual worker	159 97.5 48.3	3 1.8 12.0	1 0.6 2.6	0 0.0 0.00	0 0.0 0.00	0 0.0 0.00	163 39.5
Administrative clerical and related worker	11 35.5 3.3	18 58.1 72.0	0 0.0 0.00	2 6.5 25.0	0 0.0 0.00	0 0.0 0.00	31 7.5
Skilled worker	129 96.3 39.2	3 2.2 12.0	1 0.7 2.5	1 0.7 12.5	0 0.0 0.00	0 0.0 0.0	134 32.4
Sales worker	15 78.9 4.6	0 0.0 0.0	0 0.0 0.0	4 21.1 50.0	0 0.0 0.00	0 0.0 0.00	19 4.6
Supervisory and related worker	12 60.0 3.6	1 5.0 4.0	7 35.0 17.5	0 0.0 0.00	0 0.0 0.00	0 0.0 0.00	20 4.8
Technical & professional worker	0 0.0 0.0	0 0.0 0.0	30 90.9 75.5	0 0.0 0.00	2 6.1 66.7	1 3.0 12.5	33 8.0
Working proprietors, managers, directors, executives etc.	3 23.1 0.9	0 0.0 0.0	1 7.7 2.5	1 7.7 12.5	1 7.7 33.3	7 53.8 87.5	13 3.1
Column Total	329 79.7	25 6.1	40 9.7	8 1.9	3 0.7	8 1.9	413 100.0

Table 4.11 : **Current job by total labour market experience (in years)**

Frequency row pct col pct	**Below 1**	**1-2**	**2-3**	**3-5**	**5-10**	**10-20**	**20 & above**	**Row Total**
Unskilled manual worker	15 9.2 60.0	17 10.4 51.5	31 19.0 47.0	56 34.4 46.3	40 24.5 32.5	4 2.5 10.0	0 0.0 0.0	163 39.5
Administrative, clerical and related worker	1 3.2 4.0	2 6.5 6.1	2 6.5 3.0	11 35.5 9.1	15 48.4 12.1	0 0.0 0.0	0 0.0 0.0	31 7.5
Skilled worker	7 5.2 28.0	10 7.5 30.3	20 14.9 30.3	32 23.9 26.4	44 32.8 35.5	20 14.9 50.0	1 0.7 25.0	134 32.4
Sales worker	0 0.0 0.0	1 5.3 3.0	9 47.4 13.6	5 26.3 4.1	4 21.1 3.2	0 0.0 0.0	0 0.0 0.0	19 4.8
Supervisory and related worker	0 0.0 0.0	0 0.0 0.0	1 5.0 1.5	4 20.0 3.3	7 35.0 5.6	7 35.0 17.5	1 5.0 25.0	20 4.8
Technical & professional worker	2 6.1 8.0	3 9.1 9.1	3 9.1 4.5	12 36.4 9.9	9 27.3 7.5	3 9.1 7.5	1 3.0 25.0	33 8.0
Working proprietors, managers, directors, executives etc.	0 0.0 0.0	0 0.0 0.0	0 0.0 0.0	1 7.7 0.8	5 38.5 4.0	6 46.2 15.0	1 7.7 25.0	13 3.1
Column Total	25 6.1	33 8.0	66 16.0	121 29.3	124 30.0	4 9.7	4 1.0	413 100.0

The sample manufacturing firms have a three-tier labour market structure, and the individual labour market segments cut across the internal labour markets of these firms. These labour market segments exhibit distinct characteristic features.

The primary independent segment of the manufacturing labour market has the smallest number of jobs, and contains only managerial and executive jobs. Many of the managerial jobs are found to be held by working proprietors. Jobs in this segment have relatively high degree of protection and autonomy, and hence labour status of these jobs is quite high. These jobs are highest paid and stable. Persons holding these jobs enjoy on- the-job training facility and other associated benefits. The average number of hours worked daily by these workers is more compared to that of primary subordinate segment workers. Jobs in this segment have been held by

generally more educated upper caste Hindu older married males. Average work experience in this segment is more compared to that of other two segments.

Majority of workers, except the working proprietors, in this segment has gathered information about their first and current jobs from formal sources, such as advertisement, etc. The means of access to first and current jobs of these workers is formal selection mechanisms such as personal interviews, selection tests etc. again with the exception of working proprietors. Generally, primary independent segment workers have high socio-economic backgrounds. Almost all workers have come from urban city centres, specifically from Delhi. Parental educational and occupational status of these workers is comparatively high, and they belong to rich families.

The size of the **primary routinized segment** is considerably larger than the size of the primary independent segment, and much smaller than the size of the secondary segment. The segment consists of middle level jobs of sample firms, such as supervisory and related jobs, sales jobs, most of technical and professional jobs, and administrative, clerical and related jobs. Technical and supervisory and related workers are mostly found working on shop floors. These jobs are protected and have little or no autonomy. In many cases, jobs in this segment require implementing the decisions of managers and executives in the primary independent segment, and hence routinized. In terms of labour status, workers in this segment are better off compared to that of secondary segment workers. Wages attached to these jobs are relatively higher than the wages attached to secondary segment jobs, and quite a few jobs offer on-the-job training facility. As jobs in this segment are protected, workers are less vulnerable, therefore enjoy a whole lot of associated benefits (wherever available). Average number of hours worked daily by workers is comparatively less. First jobs of many workers are better paid, except that of many of the supervisory and related workers who happen to be internal promotees. Average work experience of workers is higher than that of secondary segment workers.

Jobs in this segment are held by more educated upper caste Hindu married males. Educational achievements of many workers are equal to that of some of the secondary segment workers. Many workers have either formal technical or professional degree, or diploma or certificate. Out of all female workers in the sample, majority are found working in this segment. particularly in clerical and related jobs. Average age of this group of workers is higher than that of secondary segment workers, and lower than average age of primary independent workers.

Workers have obtained information about their first and current jobs from formal sources, such as advertisement, employment exchange, etc. and recruitment channels of first and current jobs are characterized by impersonal selection mechanisms such as interviews, selection tests etc. There are some workers in this segment who had information about and access to their first and current jobs from "particularistic sources" and through informal recruitment channels respectively. Many workers are migrants who come from both rural and urban areas. They belong to middle or lower middle class families. Parental educational and occupational status of many workers is higher than that of secondary segment workers. In fact, workers in this segment have mixed socio-economic backgrounds.

The secondary segment of the manufacturing labour market is largest in size. It contains mainly shopfloor production-line jobs and other unskilled manual jobs. Workers in this segment either have no skills or have firm specific skills. Besides market forces, some of the institutional factors, such as 'intermediaries', personal contacts, caste or community relations etc. influence the pattern and nature of employment in this segment. Jobs are not legally protected and involve no component of autonomy. Production-line jobs are repetitive and are carried out under most unfavorable conditions. Many jobs require some sort of skills, such as that of a machine operator, fitter, painter, welder etc. Employers while filling up these jobs do not give importance to general educational qualifications of prospective candidates, rather they look for skills of the candidate which are directly useful to tasks associated with individual jobs. This is one of the reasons explaining the fact

that many of skilled jobs in this segment are held by relatively less educated persons. No on-the-job training facility is available to workers, and workers learn the firm-specific skills by watching their fellow workers doing skilled jobs.

Generally workers in this segment are less educated upper caste Hindu young married males. A large number of members belonging to Scheduled Castes, backward castes, and other religious groups are found working in this segment. All illiterate and many unmarried young males are found to be concentrated in this segment. Almost all female workers are engaged in unskilled manual jobs on shopfloors. Quite a large number of workers have general educational qualifications equal to that of many workers in the primary subordinate segment. No member of this group has any formal technical or professional qualification.

Average monthly wages of secondary segment workers is the lowest compared to that of workers in other two segments. Average number of hours worked daily is the highest. Except annual increments, many workers in this segment do not enjoy any other benefits enjoyed by workers in primary segments. Labour status of workers is low which implies that these workers form the most vulnerable group in the urban manufacturing labour market and the incidence of 'scarring' is high among them. Workers in this segment are least experienced, and have low paid unprotected first jobs. Information about first and current jobs has been obtained either from "particularistic" sources, such as caste or community contacts, other personal contacts, etc. or directly from manufacturing firms. Job search patterns of these workers are different and are reflected in methods of access to their first and current jobs. Most of these workers had access to their first and current jobs either through informal recruitment channels (i.e. on the basis of recommendations of caste or community members, or friends or other known persons who are employees of the manufacturing firms) or through on-the-job trial basis. It is interesting to note that the "extended internal labour markets" of the manufacturing firms play a dominant role in the search and recruitment processes of jobs in the secondary segment. The number of migrants is relatively large in this segment, and most of these workers have rural origin.

Secondary segment workers have poor socio-economic backgrounds. Parental educational and occupational status is considerably low, and most of these workers belong to poor agricultural families, though father's occupation of many workers is wage labour.

The urban manufacturing labour market is segmented on the basis of job characteristics and worker characteristics, and labour market outcomes in different segments are different. In fact, our findings also support the earlier finding of Despande (1979) : "..... in a sense, the segmentation of an urban labour market begins in villages", because workers of different urban labour market status have the corresponding rural status.

(b) ***Determinants of Earnings in the Secondary Segment***

Empirical analysis show that, in the secondary segment of the labour market, major determinants of earnings are : (i) labour market experience; (ii) labour market experience squared; (iii) religion; (iv) marital status; (v) parents' education; (vi) average annual family income; and (vii) first job. The final equation which provides the best statistical explanation of earnings variations in the secondary segment of the manufacturing labour market is as follows (see Table 4.2) :

$$\ln Y^{s}_{ij} = 7.210028 + .078168 \text{ (labour market experience)} - .369436 \text{ (religion : Hindu)} - .209691 \text{ (first job : unskilled manual worker)} + .014717 \text{ (parents' education)} + .113702 \text{ (marital status)} + 2.637586E\text{-}06 \text{ (average annual family income)} - .001947 \text{ (labour market experience squared).}$$

Results of the correlation analysis for the secondary segment reveal that 'age' of the worker is highly positively correlated with log earnings. Age is also highly correlated with work experience which in turn is highly correlated with log monthly earnings. Given the high correlation coefficients between "age" and "labour market experience" (i.e. 0.5647), age has been dropped in favour of work experience in the regression equation. Age is also a proxy for

work experience, and if data on actual years of experience are availabe, it is better to use work experience than age in the earnings function (Mincer 1974; Blaug, 1987).

'Marital status' of the worker is positively correlated with log monthly earnings. If the worker is married, his/her earnings is higher than the worker who is unmarried. The correlation coefficients between 'parents' education and 'father's occupation'; 'parents education' and average annual family income; and 'fathers occupation' and 'average annual family income' are large and significant. If the worker has less educated parents, his/her father is in low paid occupation, and in turn his/her average annual family income s less. The degree of correlation between 'fathers' occupation' and 'parents' education' is .6031 which is highly significant. In the final equation for the secondary segment, 'parents' occupation' captures the effect of 'fathers' occupation' on earnings, and therefore father's occupation does not figure in the equation. Given the positive, significant and large degree of correlation between 'place of origin' and 'average annual family income', the latter variable captures the effect of the 'place of origin' on earnings. 'Place of origin' and 'place of schooling' is highly and significantly correlated with each other. Workers having rural origin have their education from rural government schools, and those having urban origin have their education from urban government schools. The correlation coefficient between 'place of schooling' and 'years of schooling' is .4533 which is significant thereby implying that secondary segment workers who have their education from rural schools have less years of schooling than that of workers schooled in urban government schools. When 'years of schooling' is entered as an explanatory variable in the equation, 'place of schooling' is automatically dropped from the equation on the basis of partial F-test. We will find that 'years of schooling' is not included in the final equation as it is not significantly correlated with log monthly earnings. Same is the case with 'education squared' as an independent variable in the equation.

'First Job' of the worker is included in the equation as a regressor as it is positively and significantly correlated with log monthly earnings. 'First job'

of the worker is negatively correlated with 'average number of hours worked daily' by the worker and the 'firm size'. Workers in this secondary segment jobs have to work daily for longer hours, and they are concentrated in relatively small firms, measured in terms of average annual turnover. 'First job' as a regressor captures effects of other two correlated variables on earnings.

The best regression equation for the secondary segment explains nearly 52 per cent (R^2 = .51895) of earnings variations, and all B-coefficients are significant at 5 per cent level, even some coefficients are significant at one per cent level (see Table 4.12). Among all explanatory variables in the equation, the explanatory power of 'labour market experience' is the highest, i.e., it explains nearly 23 per cent of earnings differentials. 'Labour market experience' also enters at a very early stage in the stepwise regression procedure. 'Labour market experience' and 'religion' together explain about 38 per cent of variations in earnings. 'Religion' alone explains nearly 15 per cent of earnings differentials (R-square change = .15379). When 'first job' is brought in the equation, it along with earlier two variables explain about 45 per cent of earnings variations. The explanatory power of 'first job' is relatively low in the earnings equation. Inclusion of 'parents' education' as a regressor raises the value of R^2 marginally from .44834 to .48204. The contribution of 'parents' education' alone in explaining earnings variations in the secondary segment is about 3.4 per cent. The individual contribution of 'marital status' as an independent variable in explaining total earnings is only about 2 per cent. 'Average annual family income' together with above five variables explain nearly 51 per cent of earnings differentials. Finally, 'labour market' experience squared' when brought in the equation raises the value of R^2 to .51895. The β-coefficient of 'labour market experience squared' is negative which captures the declining experience-earnings profiles after a certain period of work experience of the secondary segment worker.

It is worth mentioning that multicollinearity among independent variables is a problem in any regression equation. Since it is a property of the

sample data and not of the population. one cannot, rictly speaking, test for its existence (Blaug, 1987). But the correlation matrix of our best regression discussed above does not show that multicollinearity affects our results. Multicollinearity manifests in large R-square coupled with small t-values of almost all coefficients. That is not the case here.

Regression results suggest that the 'first job' of the worker is one of the important predictors of earnings in the secondary segment. 'First job' is represented by six dummy variables, and in the secondary segment equation, the dummy variable representing the 'unskilled manual job' has a negative and large coefficient (see Table 4.12). So far as the urban manufacturing labour market in Delhi is concerned. this finding suggests that workers who had low paid unskilled manual first jobs continue to earn 21 per cent less in their current jobs compared to workers who were in relatively high paid first jobs. We have mentioned elsewhere in this paper that 'scarring' is a common phenomenon in the secondary segment of the urban labour market in Delhi. Occupational mobility of secondary segment workers is either low or absent. perhaps partly due to 'negative feedback effect' and partly due to distinct characteristic features of Indian urban labour markets where institutional factors figure prominently. The above finding therefore suggests that workers having low paid first jobs are still caught up in the secondary segment of the labour market. However. empirical studies are yet to be carried out in India to provide evidence of outcomes of 'negative feedback effect' in urban labour markets.

The coefficient of the religion dummy (i.e. Hindu) is negative and large (B-coefficient = -.369436). Being a Hindu rather than being a Muslim or a Christian depresses one's earnings by 39.6 per cent in the secondary labour market. This is perhaps a surprising finding. However, if we examine the characteristics of the secondary labour market in the sample, we will find that most of the Hindus are concentrated in low paid unskilled manual jobs, and quite a large number of workers belonging to other religions, such as Islam or

Christianity, are working in relatively higher paid skilled jobs. This is perhaps one of the reasons explaining disadvantaged position of Hindu workers in the secondary segment.

Table 4.12 : **Regression results for the secondary segment (Dependent variable : log monthly earnings)**

Variable	B-Coefficient	Standard Error of B-Coefficient	β-Coefficient	T-Value	Signifi-cance of T-Value
Labour market experience	.78168	.016305	.651242	4.794	.0000
Labour market experience squared	-.001947	.907824E-04	-.276137	-2.145	.0328
Religion (Hindu)	-.369436	.600168	-.274846	-6.140	.0000
Marital status	.113702	.045546	.120298	2.496	.0131
Parents' education	014717	.004516	.153719	3.259	.0013
Average annual family income	2.637586E-06	1.19916E-06	.102341	2.200	.0286
First job unskilled manual	-.209691	0.38767	-.245828	-5.409	.0000
Constant	7.210028				
Multiple R	72038				
R-square	51895				
Adjusted R-square	50730				
Standard error	28480				
F=	44.53858				
Regression	7				
Residual	289				
No. of cases	297				

'Marital status' emerges as yet another important predictor of personal earnings in the urban labour market in Delhi. Being married raises one's earnings by 11.4 per cent. This finding somehow suggests that perhaps employers consider married persons as relatively stable workers, and it is this characteristic of workers which yields them a higher market premium than the unmarried workers. Among the family background variables, 'parents' education' and 'average annual family income' are two other important determinants of personal earnings. Given the statistically significant and

positive coefficients of these two predictors, higher the educational attainment of his/her parents, and the average annual income of his/her family, higher is an individual worker's earnings. This finding supports the claims of the SLM theorists that socio-economic backgrounds of an individual rather than his/her productivity related characteristics are important in determining earnings in a highly structured urban labour market.

'Labour market experience' has market premium in the early years of the working life of the secondary segment worker. Given the semi-log form of the earnings function, an additional year of work experience gives a return of about 7.8 per cent in the secondary segment of the manufacturing labour market. A negative coefficient of 'labour market experience squared' suggests that after a certain initial years of work experience, an additional year of work experience exerts a declining effect on the level of earnings.

One of the objective measures of the importance of a predictor in the final regression is the size of its β-coefficient. If we examine the β-coefficients of the above discussed predictors in the secondary segment earnings equation, we will find that 'labour market experience' contributes most to the explanation of total earnings. In terms of relative importance of explanatory variables, 'labour market experience' is followed by 'parents' education', 'marital status', 'average annual family income', 'first job' and 'religion'. What is striking here is that 'years of schooling' does not yield any return in the secondary segment of the manufacturing labour market, and therefore it does not figure in the final earnings equation. This finding supports the proposition of the SLM theory that there are no returns to schooling and if there is any, it is too low in the secondary segment of the labour market. Wage setting mechanisms in the secondary segment do not take into consideration variations in productivity related characteristics across individual workers. Secondary segment workers do not receive on-the-job training which further supports the SLM proposition.

Wage determination mechanism in the secondary segment of the manufacturing labour market is highly influenced by market forces. Given the high rate of rural-urban migration in India, employers find surplus labour supply in the secondary segment of the manufacturing labour market in Delhi. Existence of this surplus labour supply depresses 'reservation wages' of the secondary segment workers, and employers find it easy to obtain labour by offering low wages. Workers in the small scale manufacturing sector in Delhi, particularly in the sample, are not unionized thereby indicating that such workers have no bargaining power in the market.

(c) ***Determinants of Earnings in the Primary Segment***

The major determinants of earnings in the primary segment of the manufacturing labour market are: (i) father's occupation; (ii) labour market experience; (iii) on-the-job training; (iv) sex; (v) years of schooling squared; and (vi) years of vocational schooling squared. The regression equation which best fits the primary segment data is as follows :

$\ln Y^{p}_{ij}$ = 6.852817 + .700172 (father's occupation : administrative or professional) + 092363 (labour market experience) - .002426 (labour market experience squared) + .288124 (on-the-job training) - .232952 (sex) + .002679 (years of schooling squared) + .022613 (years of vocational schooling squared).

The correlation analysis for the primary segment reveals that 'sex' of the worker is negatively correlated with log monthly earnings. This variable is also negatively correlated with 'marital status'. Most of the female workers in the primary segment are unmarried, and the married workers have relatively longer work experience. When labour market is entered in the equation, 'marital status' is dropped on the basis of partial F-test. 'Parents' education', 'father's occupation' and 'average annual family income' are highly, positively and significantly correlated with each other. Among these three variables, 'father's occupation' is highly positively correlated with log monthly earnings; and this variable captures the effects of other two correlated variables in

explaining earnings variations in the primary segment. When 'father's occupation' is entered in the regression equation, the explanatory power of the model improves over the explanatory power of other models which includes either of the other two highly correlated variables.

'First job' of the worker as an independent variable has been dropped from the regression equation for the primary segment, even though this variable is highly positively correlated with log monthly earnings. Examination of sample data reveals that 'first job' of many workers is also their current job. To neutralize the effect of current job on earnings level we preferred to drop 'first job' as an explanatory variable from the regression.

When log monthly earnings is regressed on 6 original and one dummy variable included in the equation for the primary segment, the model explains about 75 per cent of earnings variations. The B-coefficient of all explanatory variables in the equation are significant at 5 per cent level (see Table 4.13). The explanatory power of 'father's occupation' is around 50 per cent (R^2 = .49674). 'Father's occupation' and 'labour market experience' together explain about 60 per cent of earnings differentials. When 'labour market experience squared' is brought in the equation, the explanatory power of the model increases by 5 per cent (R^2 change = .04624). The negative B-coefficient of 'labour market experience squared' variable captures the declining experience-earnings profiles in the primary segment.

'On-the-job training' emerges as one of the determinants of earnings in the primary segment. The individual contribution of this variable in explaining variations in personal earnings is about 4 per cent (R^2 = .03701). 'Sex' of the worker along with earlier variables explains 70 per cent of earnings differentials. Inclusion of 'years of schooling squared' in the equation raises the explanatory power of the model by nearly 2 per cent. Finally, 'years of vocational schooling squared' along with earlier variables explains nearby 75 per cent of total earnings in the primary segment (R^2 = .74661). The point

worth noting is that both general and vocational education and on-the-job training have market premium in the primary segment of the small-scale manufacturing labour market in Delhi.

Human capital variables, such as education, experience and on-the-job training are valued in the primary segment of the manufacturing labour market, and education as an explanatory variable finds a place in the regression equation. Among all predictors, size of the B-coefficient of 'labour market experience' is .092363, and it means that an additional year of work experience in the primary segment raises the earnings of the worker by around 9.2 per cent. The size of the B-coefficient of this variable differs in regression equations for primary and secondary segments; the size is smaller in case of the primary segment equation. This finding contradicts the proposition of the SLM theory that 'work experience' yields little return in the secondary segment compared to that of primary segment.

Table 4.13 : **Regression results for the primary segment (Dependent variable : log monthly earnings)**

Variable	B-Coefficient	Standard Error of B-Coefficient	β-Coefficient	T-Value	Significance of T-Value
Father's occupation Administrative or Professional	700172	102529	408791	6.829	0000
Labour market experience	092363	016286	746214	5.671	0000
Labour market experience squared	-.002426	581015E-04	-.534730	-4.175	0001
On-the-job training	288124	105840	163690	2.722	0076
Sex	-.232952	088201	-.136008	-2.641	0095
Years of schooling squared	002679	6.22593E-04	.250173	4.303	0000
Years of vocational schooling squared	022613	007282	.203380	3.106	0024
Constant	6.852817				
Multiple R	.86407				
R-square	.74661				
Adjusted R-square	.73019				
Standard error	.30812				
F=	45.45971				
Regression	7				
Residual	108				
No. of cases	116				

Among the social background variables, 'father's occupation' (administrative or professional) is an important predictor of personal earnings in the primary segment. B-coefficient of this variable is .700172. If the father of a worker in this segment is in administrative or professional job, his/her earnings increase by nearly 70 per cent. The B-coefficient of 'sex' variable is negative and significant. In the primary segment, being a female rather than a male depresses one's earnings by 23.3 per cent, all other things remaining the same. This finding indicates preference for male workers in the primary segment.

Both general and vocational education of workers do have market premium in the primary segment of the manufacturing labour market. Positive coefficients of 'years of schooling squared' and 'years of vocational schooling squared' indicate that employers perhaps use education as 'screening device' in the primary segment. It also implies that earnings in the primary segment are a parabolic function of level of general and vocational education, and the parabolic effects of years of general and vocational schooling are positive. Workers who enjoy on-the-job training facility earn nearly 28.8 per cent more than those who do not. These findings support the claims of the SLM theorists that human capital variables in general and education in particular yield a positive return in the primary segment of the labour market.

A comparison of regression results for primary and secondary segments reveals that the earnings functions that best fit the individual segments are different, and the size of the coefficients of the common explanatory variables in these earnings functions are also different, generally large in case of primary segment equation. This finding strongly supports our conclusion that the urban small scale manufacturing labour market in Delhi is divided into distinct segments where workers face different earnings functions. We argue that distinct low wage secondary labour market exists in the manufacturing sector in Delhi where wage setting mechanism is greatly influenced by market forces.

In the earnings equation for the primary segment, if we rank the seven determinants of earnings in terms of their relative contributions in explaining total earnings (on the basis of size of β-coefficients of these variables), we will find that 'labour market experience' heads the list, followed by 'father's occupation', 'years of general schooling squared', 'years of vocational schooling squared', 'on-the-job training', 'sex', and 'labour market experience squared'.

(d) ***Determinants of Earnings in the Whole Sample***

The major determinants of earnings in the whole sample are : (i) segment of employment; (ii) labour market experience; (iii) father's occupation; (iv) religion; (v) parent's education; (vi) labour market experience squared; (vii) first job; (viii) on-the- job training; and (ix) marital status. The aggregate regression equation that best fits the sample data is :

$$\ln Y^{w}_{ij} = 6.815216 + .277726 \text{ (segment of employment)} + .084892 \text{ (labour market experience)} .743984 \text{ (father's occupation : administrative or professional)} + .399225 \text{ (religion : Muslim)} + .016425 \text{ (parents' education)} - .002071 \text{ (labour market experience squared)} - .173946 \text{ (first job : unskilled manual)} + .374189 \text{ (on-the-job training)} + .112043 \text{ (marital status)}.$$

In the whole sample, 'caste of the worker' is positively correlated with 'years of schooling' thereby meaning that workers belonging to lower caste categories are relatively less educated than higher caste workers. The degree of correlation between 'place of origin' and 'log monthly earnings' is also positive and significant. Workers having urban origin earn more than workers having rural origin in the manufacturing sector in Delhi. The 'place of origin' variable is significantly correlated with many other variables, particularly with 'parent's education'. 'Parents' education' captures the effects of the 'place of origin' on earnings of the individual worker. Workers having rural background are a disadvantaged group in the small scale manufacturing

sector in Delhi. Their parents are less educated, and occupational status of their fathers is low. These workers belong to poor households having considerably low average annual family income. They have access to their low paid first job through informal channels of recruitment. They are mostly found concentrated in the lower segment of the manufacturing labour market. The labour market structure or the 'segment of employment' variable captures the influence of a whole lot of socio-economic variables on earnings.

The positive and high correlation between the 'segment of employment' and 'years of vocational schooling' suggests that workers in the upper segment of the labour market have higher vocational educational status than workers in lower segments of the labour market. In fact, in our sample, in the secondary segment, workers have no formal vocational schooling at all. 'Segment of employment' captures the influence of vocational education on earnings.

In the manufacturing labour market, 'average number of hours worked daily' by the worker is negatively correlated with 'log monthly earnings' implying thereby that workers who work for more number of hours a day are paid less than the workers who work for less number of hours a day. Workers who work for a longer duration in a day are found in the lower segment of the labour market. Here too, 'segment of employment' captures the effect of daily work duration on earnings.

The aggregate equation explains nearly 74 per cent of earnings variations in the sample (see Table 4.14). The 'segment of employment' or the 'labour market structure' is the most powerful explanatory variable in the earnings equation, and it alone explains nearly 35 per cent of earnings differentials in the sample. The finding supports our argument that in the small scale manufacturing sector in Delhi, structural and institutional factors in the labour market are important determinants of earnings. The individual contribution of 'labour market experience' variable in explaining total earnings is 15 per cent. The above two variables along with 'father's occupation' explain about 60 per cent of earnings variations in the sample. 'Religion' of

the worker raises the explanatory power of the equation by 6 per cent. 'Parents' education' explains nearly 2 per cent of earnings variations in the sample. 'First job' of the worker and 'on-the-job training' explain one per cent and 1.5 per cent of earnings variations respectively. Contribution of 'marital status' in explaining earnings differentials is about 0.5 per cent. Results of the aggregate earnings equation suggests that structural, institutional and socio-economic variables are important determinants of earnings of sample workers, and employment status explains a little less than half of the explained earnings variations.

Being a primary segment employee rather than a secondary segment employee raises one's earnings by 27.8 per cent, ceteris paribus. This finding draws our attention to the nature of jobs found in these two labour market segments. In the primary segment, jobs are protected in terms of written agreement of employment, and the secondary segment jobs are unprotected. This very fact influences levels of earnings of workers to a large extent indicating the importance of institutional factors in the process of wage determination in the manufacturing sector in Delhi.

'First job' as a predictor explains earnings variations substantially among individuals in the sample. This variable has significant negative B-coefficient. Workers who had their first job as unskilled manual, earn about 17.4 per cent less. This finding indicates the importance of one's initial job history in wage determination process. An additional year of father's schooling raises one's earnings by 1.6 per cent. If one's father is employed in administrative or professional job, the worker earns around 74.4 per cent more than workers whose fathers are employed in any other type of occupation. These findings do confirm the proposition of the SLM theory that social background rather than productivity related characteristics play an important role in the wage determination process in a highly segmented labour market. Being married also increases one's earnings by 11.2 per cent which indicates that the stability related characteristics of a worker are valued by employers. Workers who avail on-the-job training facility, earn nearly 37.4 per cent more than those who do not. An additional year of work experience

increases one's earnings by 8.5 per cent. The parabolic effect of work experience is negative, thereby implying that after certain years of work experience, returns to every additional year of experience starts declining. Ranking of independent variables on the basis of size of β-coefficients in aggregate equation show that 'years of labour market experience' is the most important predictor of personal earnings, followed by 'father's occupation', 'segment of employment', 'parents' education', 'religion', 'on-the-job training', 'marital status', 'first job', and 'labour market experience squared'.

Table 4.14 : **Regression results for the whole sample (Dependent variable : log monthly earnings)**

Variable	B-Coefficient	Standard Error of B-Coefficient	β-Coefficient	T-Value	Significance of T-Value
Segment of employment	277726	0 51434	217017	5.400	0000
Labour market experience	084892	0 10027	572848	8.466	0000
Father s occupation Administrative or Professional	743984	0 088333	256984	8 422	0000
Religion (Muslim)	399225	059434	185578	6 717	0000
Parents education	016425	003013	215663	5 451	0000
Labour market experience squared	- 002071	4 33721E-04	- 307955	-4 774	0000
First job Unskilled manual	- 173946	037676	- 151196	-4 617	0000
On-the-job training	374189	093826	121716	3 988	0001
Marital status	112043	038806	085608	2 887	0041
Constant	6 815261				
Multiple R	85975				
R-Square	73917				
Adjusted R-square	73334				
Standard error	29736				
F=	126.89459				
Regression	9				
Residual	403				
No. of cases	413				

All regressions discussed in this section are highly significant and confirm the partial F-test with 95 per cent confidence limit'. Also Student's t-test confirm that all B- coefficients of predictors are significant at 5 per cent level though some are even significant at one percent level.

In conclusion, we can argue that the regression analysis strongly indicates the existence of compartmentalized labour market segments in the urban small-scale manufacturing sector in Delhi. Our findings suggest that institutional factors and socio-economic backgrounds are important in determining earnings in the urban manufacturing labour market. The overall labour market outcomes of this sector reflect the existing socio- economic inequality in India. The functioning of the small-scale manufacturing labour market in Delhi not only maintains the socio-economic inequality but also reproduces it. This is demonstrated by the fact that socio-economically disadvantaged groups are found crowded into vulnerable labour market segments. Relatively less privileged groups in the Indian society are a less fortunate lot in urban labour markets.

5. SOME IMPLICATIONS

The context of the investigation in the small-scale manufacturing sector in Delhi is very specific, and the findings are limited to that specific context. The Indian economy is undergoing fast change and so also characteristics of urban labour markets. Moreover, a single micro level study like the one we have here may not become the sole basis on which we can generalize implications for macro policies. We, therefore, assume that more similar micro level studies, if undertaken in other urban areas in India, would come out with findings similar to the present study. The policy implications discussed in this section should be taken into consideration keeping in view the specific context.

5.1 Implications for Employment Policy

The Marxist SLM theory argues that employers, by continuously developing and adopting capital-intensive technology,try to create and maintain an industrial reserve army of unemployed. This reserve army of unemployed is not evenly distributed between all segments of the labour market. Rather it is mainly concentrated in the secondary segment of the labour market. Many of these unemployed usually are from socio-

economically disadvantaged groups, i.e., women, educated young adults, scheduled castes, scheduled tribes, etc. The present investigation shows that many educated young people, scheduled castes, scheduled tribes, migrants from rural areas, etc, all having lower socio-economic status, are concentrated in the secondary segment of the labour market. Given the economic policies which do not very much favour the agricultural sector in India, the present rural-urban migration is unlikely to be arrested in the near future. Large-scale rural-urban migration will raise the level of competition to have access to even the secondary segment unprotected, unstable low paid jobs. It is found that in the primary segment, 'level of education' is used as a 'screening device', and employers prefer workers with higher socio-economic background. Given this situation in the labour market in the small-scale manufacturing sector in Delhi, increasing the mean years of schooling of secondary segment workers, without bringing about any visible change in their socio-economic status, would not raise their chances of employability in primary segment jobs. This may happen partly because of deliberate policy perused by employers, and partly due to the existence of rigid labour institutions.

From a policy standpoint, investing more in the education of the vulnerable group of workers in the small-scale manufacturing sector in Delhi may not raise their employability in good jobs, given the credential inflation and resulting devaluation of educational degrees in India. The nature of the labour market and employers' control of that market to a large extent will determine the level of unemployment and under-employment. To reduce unemployment, the number of jobs in the protected segment of the labour market has to be raised relative to the number of jobs in the unprotected vulnerable segment. In other words, the nature of the labour market segment in which the highly disadvantaged participate (i.e. secondary segment), must change. It implies that the status of jobs in terms of legal protection and other associated benefits needs to be improved. This may call for structural changes in the industrial sector having highly segmented labour markets to achieve equity, development and full utilization of human resources.

5.2 Implications for Income Distribution

The study shows substantial earnings differentials between primary and secondary segments of the manufacturing labour market in Delhi. In the secondary segment, there is no association between levels of schooling and earnings. The relationship between schooling and earnings then depends on the nature of the labour market segment. It implies that the distribution of earnings depends primarily on the distribution of jobs and wage levels associated with jobs in different segments of the manufacturing labour market.

By redistributing worker characteristics then will not help in bringing about an equitable distribution of income of workers in the segmented manufacturing labour market. In this case, focus of the redistribution policy should be on wages attached to different types of jobs. As long as the secondary segment of urban labour markets contains low paid unstable and unprotected jobs, the distribution policy aiming at reducing the level of urban poverty will not bear any fruit. Rather, labour market mechanisms will reproduce the existing socio-economic inequality in Indian society. A long run higher growth rate in the country, however, may require earnings equalization as a prerequisite to mass mobilization of labour force and hence full utilization of human resources.

5.3 Implications for Educational Policy

In the present study, the mean years of schooling of workers in different labour market segments vary, and these are the lowest in the secondary segment. However, many primary segment workers have the same level of general education as that of secondary segment workers. The main difference between the two groups of workers lies in terms of years of vocational schooling. The earnings differences between primary segment and secondary segment are also large in the sample. The level of education has no market premium in the secondary segment. It, therefore, follows that vocational schooling is important in getting access to protected primary segment jobs in the small-scale manufacturing sector in Delhi.

Other things remaining the same, specifically type of skills required in the small-scale manufacturing sector, investment in vocational schooling may raise chances of employability of vulnerable groups in protected good jobs. However, definite policy implications for educational planning in India can only be drawn on the basis of large-scale empirical studies aimed at examining education-productivity-earnings relationships in the SLM framework. The only thing which can be inferred here is that expansion of educational opportunities will not alleviate poverty in urban India as long as poor people are found working in secondary labour markets.

Notes

1 'Globalization' essentially implies a free flow of capital in search of cost minimization, or cheaper and more productive labour. Its spread can be attributed to changing nature of production processes, lowering of trade barriers, and a greater capacity of developing countries to attract technologies from the more advanced countries. 'Liberalization' implies a set of policy packages aimed at restructuring the economy so as to open itself to free flow of capital and other factors of production. Some countries, including India, are liberalizing their economies under strict structural adjustment programmes, because they have found that liberalization has worked successfully elsewhere in promoting employment, although in many countries, public enterprise activity has contracted resulting in decline in public sector employment (ILO, 1994).

2. "Scarring" refers to frequent bouts of unemployment of certain groups in the labour force that have long-term persistent effects on wages and employment rates of the affected individuals (Taubman and Wachter, 1986, p. 1203).

3. "Institutions" can be defined as the humanly devised constraints that structure political, economic and social interactions (North, 1991). Institutions can also be defined as complexes of norms of behaviour that persist over time by serving collectively valued purposes (Uthoff, cited in Rodgers, [1994], p.1). Two distinct meanings can be given to the term "institution" - first is in the sense of organizations; and the second refers to persistent rules (formal or informal or written or implicit), norms and constraints governing behaviour of individuals or social organizations (for a detailed discussion, see Rodgers, 1994).

4. "Personal income distribution" refers to the division of income or wealth by size. It is different from 'functional distribution of income' which means division of income between income from labour and income from property (Bronfenbrenner, 1971). The larger the individual's income on the average the smaller the proportion that is derived from wages and salaries.

5. "Internal labour market" refers to the set of rules and institutions that govern the allocation and pricing of labour within the firm (at micro level) and within a particular production system (at macro level). Internal labour markets always have well-developed institutional characteristics. These characteristics may be explicit or implicit and are outcomes of historical events largely influenced by social institutions. For a detailed discussion, see Wilkinson, 1981; Osterman, 1984.

6. For a critical review of SLM models, see Taubman and Wachter (1986) and Cain (1976).

7. 'Circumstances of employment' refers to the institutional arrangements that govern labour relationships and constrain outcomes (e.g. pay scales, job ladders, promotion criteria and so on).

8. For a critical analysis, see Taubman and Watcher, 1986.

9. Studies (Blaug et al., 1969; Panchmukhi, 1978; Kothari, 1978; Varghese, 1989; 1992) also find that there is an upgradation or devaluation of educational credentials in the labour market in India which is reflected in increase in average educational qualifications of urban labour force.

10. "Credentialism' or 'ratchet effect' or 'diploma disease' refers to a situation where there are various levels of jobs with rigid wages, and various levels of education, and where preference for hiring in a particular job is always given to applicants with higher educational qualification (Fields, 1974; Bhagwati and Srinivasan, 1977).

11. 'Registered factory' is one which is registered under Sections 2m(i) and 2m(ii) of the Indian Factory Act, 1948. The section 2m(i) and 2m(ii) refer to any premises including the precincts thereof (a) whereon ten or more workers are working or were working on any day of the preceding twelve months, and in any part of which a manufacturing process is being carried on with the aid of power, or is ordinarily so carried on or (b) whereon twenty or more workers are working or were working on any day of the preceding twelve months, and in any part of which a manufacturing process is being carried on without the aid of power, or is ordinarily so carried on (Annual Survey of Industries, Government of India, 1987-88).

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