

**SERVICE SECTOR GROWTH AND EMPLOYMENT
THE INDIAN EXPERIENCE**

 **JAWAHARLAL NEHRU UNIVERSITY**

**SERVICE SECTOR GROWTH AND EMPLOYMENT
THE INDIAN EXPERIENCE**

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for the Degree of Master of Philosophy in Applied Economics
of the Jawaharlal Nehru University*

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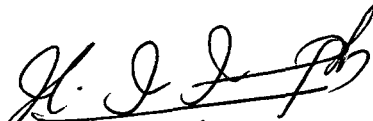
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I hereby affirm that the work for this dissertation, "Growth of Service Sector and Employment Generation: The Indian Experience", being submitted as part of the requirements of the MPhil Programme in Applied Economics of the Jawaharlal Nehru University, was carried out entirely by myself. I also affirm that it was not part of any other programme of the study and has not been submitted to any other University for the award of any Degree.

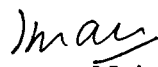
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Certified that this study is the bona fide work of Minnu Rose Joy, carried out under our supervision at the Centre for Development Studies.


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Dedicated to
My Dearest Achan and Amma

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Needless to say, all errors and omissions are mine.

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Growth of Service sector and Employment Generation: The Indian Experience

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Abstract

Service sector is the fastest growing sector in India. Since 1980's the growth of the sector has been significant and has emerged as the major contributor to the growth of GDP at national as well as in most of the states. However, service oriented growth in India appears to counter the theoretical predictions of traditional structural change. The Indian case is unique such that not only the employment elasticity for service sector is nowhere near unity; it is even declining in the nineties, prompting the much talked about 'jobless growth'. What is more along with declining employment generation potential, the nature of employment being generated tend to cast doubt about the quality of work in the sector.

Against this background, the objective of the present study has been as follows: First, to study the trends and patterns of output and employment in the service sector at sectoral and sub-sectoral in a regional perspective and the nature or their relationships thereof. Second, is to analyse quality of service sector employment in terms of their various aspects of vulnerability such as job security, income security and conditions of work. These issues were analysed by using secondary data for the period 1983 to 2004-05 and applying appropriate statistical tools. The main data base of the study is the five quinquennial survey results on employment and unemployment undertaken by National Sample Survey Organisation.

The results of the study show that structural change in terms of output towards the service sector was not accompanied by a corresponding growth in employment. Growth though in the period 1999-00 to 2004-05 the employment growth has picked up compared to previous period. The regional patterns in service sector employment confirm the argument that there is a regional difference in terms of employment growth and output growth. The study also brings out the growing trends of feminization of work in the low quality, low value adding services such as community and personal services.

Indices of quality of work, shows that the condition of work in some of the major sectors like 'retail trade' and 'land transport' which contribute highly in both output and employment, shows low quality. It is also concluded from the findings that the indicators of insecurity positive correlation with each other but negative correlation with average wage per day. Majority of the workers in service sector are vulnerable in terms of job security, income security and conditions of work. The workers having low levels of education and large family size are found to be employed in the sectors which are most vulnerable. Further, share of workers who are in most vulnerable condition are higher in rural area than in urban areas and they belong to the socially deprived sections of the society.

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Chapter I

Introduction

Background of the study

One of the often cited dimensions of structural transformation of the Indian economy has been the emergence of service sector as the lead sector. More specifically, since the early 1980s not only the rate of growth of this sector has been ahead of other sectors but its contribution to overall economic growth has also been the highest. Such a structural change has not been confined to the national level, but in many of the states service sector has emerged as the engine of growth. However, service oriented growth in India appears to counter the theoretical predictions of traditional structural change theory propounded by Fisher (1939, 1946) and Clark (1957). Much of the research on India's service sector growth has been oriented towards understanding and explaining this peculiar structural change [Bhattacharya and Mitra, 1994; Papola, 1994; Gordon and Gupta 2004; Mathur, 1983]. However, a more intriguing, yet underexplored aspect of India's service sector growth has been the low employment elasticity of the sector, compared to other sectors in India, or even with service sector of other countries¹. Going by the traditional understanding of services, wherein they are non-tradable and non-storable, for service output to be generated the producer and consumer should meet at a physical transaction point. This by implication would generate unit employment elasticity. This was vindicated by the structural change theories and the empirical testing of these theories by Kuznets (1968, 1972). However, the Indian case is unique such that not only is the employment elasticity for service sector nowhere near unity, it is even declining in the nineties, contribution to the much talked about 'jobless growth', though there are some signs of changes in this trend in the recent past. In this context, this study looks into the output-employment relation in the service sector since 1980s, giving due importance to the regional as well as the gender aspects. The study also tries to measure quality of employment that is being generated in the service sector.

¹ SAARC (2005), during the period between 2000 and 2004, the total employment elasticity as well as the employment elasticity of service sector is comparatively low that other countries. The study compared the elasticity with other developing countries like Bangladesh, The Maldives, Nepal, Pakistan and Sri Lanka.

This chapter introduces the major issues and concepts that are being discussed in the event of the remarkable growth of the sector. The next section deals with the different views on the definitions of services and thereby the different characteristics of services. Section 1.2 presents the theoretical background of the study, growth of the sector in India and its employment aspects with due importance to regional aspects. Section 1.3 undertakes a critical review of on gives literatures of the quality of employment. Given these backgrounds, Section 1.4 brings out the lacunae of existing studies. Major issues that need to be addressed are discussed in section 1.5 followed by the specific objectives of the study, major data sources used to fulfill those objectives and also different methodologies used in section 1.6. Last section briefly describes the chapter scheme of the study.

1.1 Definitional Problems

Giving importance to primary and secondary sectors, in discussions of development of an economy, tertiary/service sector was considered as the residual sector. During the initial periods of development of an economy, the role of service sector to act a supporting sector in the industrialization process as well as to link agricultural and industrial sector. Later on, when the need for new services came and with the influence of technology, services became equally, if not more, important than other sectors in the development process and the sectoral composition was identified as primary, secondary and tertiary. All developed economies are dominated by the high share of tertiary/service sector in their national output as well as in providing employment. These arguments can be seen in the theories of structural change of an economy, which will be explained later in this chapter. Before going into the details of structural change of an economy, a discussion on definitional differences, characteristics, and the changing nature of service sector is in order.

There is no consensus regarding the definition of services. The most popular definition, given by Clark; specified a three sector classification of economic activities into primary, secondary and tertiary. Fisher, who is one of the proponents of the theories of structural change, considered products like travel facilities, amusements of various kinds, governmental and other personal services, and other intangible services like music, art, literature, education, science, philosophy, etc. to be included in the services sector. These traditional definitions did not consider services

like 'retail trade', 'finance and banking' related activities, 'transportation' etc in the sector. Basically, they considered those activities, whose demand comes at a later stage of industrial growth or at a state of high per capita income. To understand or define 'services' it is important to clarify the difference between a 'service', an 'intangible' and a 'good'. Various Studies [such as Katauzian, 1970; Hill, 1999; Stanback, 1979; Kumar and Mathur, 1996] shows the conceptual differences of these terms and also shows the evolution of services as an importance part of economy in course of time.

Hill (1999) defines these concepts as follows: a '*good*' is an *entity* over which *ownership rights* may be established. It is *tradable* and the owner derives some economic benefits from the trade. Production and disposal of 'good' should be separable except in case of natural resources. Ownership of a 'good' can be exchanged any number of times which in turn benefit distributors who operate between the original producers and eventual users of goods. '*Intangibles*', on the other hand, have no physical dimension or spatial co-ordinates by their own. The economic characteristics of goods are applicable in case of intangibles, also. They are additions to the existing knowledge and new information of all kinds. Since they have no physical shape, they are stored on papers, films, disks etc, and are sometimes transmitted electronically and so they can be traded and re-traded. Having explained the characters of goods and intangibles, lets now move on to '*Services*'. Services are the relationship between the producer and consumer. They cause change in the conditions of one economic unit produced by the activity of another unit. Due to service rendered, there is material² change to the person or the property of the consumer, but since they are not entities, they cannot be stored and therefore ownership right cannot be established³. While defining these terms Hill (1999) also points out that there is nothing common in intangibles and services, despite the practice of describing them as such. Katouzian (1970), categorizes services into three; new services, complementary services and old services. 'New services'⁴ emerge due

² Example given by Hill (1999) is haircut, surgical operations, etc.

³ While the output of a farmer is separate entity, the output of a scientist in research and development department, who finds new methods of production are not separable, the service of a scientist is inherent in the scientist. Similarly, apart from goods, in case of services the place of production is determined by the customer and easily accessible to customer.

⁴ Demand for these services increases with rise in per capita income. Katouzian argues that the consumption of these services is stagnant before the Rostovian State of high mass consumption. Examples for these services are education, medical services, entertainments, etc.

to change in per capita income, while that of 'complementary services'⁵ and 'old services'⁶ emerges due to change in industrialization.

Since 'services' support the smooth functioning of other sectors, it is not possible to separate services from other two sectors (that is, the primary and the secondary) of the economy. The beginning of financial services can be dated back to the time when trading activities started. The importance of services aggravated during industrial revolution, as there was need for distributors, trade, transport, banking facilities, etc. Coming to a modern economy, the need of services is seen in every front. Especially due to urbanisation and also due to the innovations that are taking place in the field of technology. The range of services varies from garbage collection from households to the research that is taking place in Research and Development units in a country. Services are used as synonym to tertiary sector; with the fact that the service that we consider in analysing economic growth performance of an economy is mixed up with the intangibles and services that literature distinguish. The sector is heterogeneous and dynamic in nature. Most of the services are now storable, tradable and can be considered to have all the features of a manufactured good.

From the definitions it can be generalized that services are labour intensive, especially because services are inherent in the producer. Though these services are traded with the help of technology, the sector have enormous opportunities for the increasing labour force. Studies show that due to urbanisation, contracting out of manufacturing and other such activities the scope of services is increasing. Thus whether it is because of the positive sectoral linkages (demand induced) or low productivity of the sector as compared to other sectors (supply induced), growth of services is remarkable in developed as well as developing nations.

1.2 Theoretical Background

Welfare implication of economic growth lies in its capability to generate quality employment for the increasing labour force of an economy. Whether it is because of the demand side or the supply side explanations, theories of economic growth

⁵ Along with industrialization, demand for certain services increase. They are necessary for the growth of industrial sector and also for the rising urban demands. Services like banking, finance, transportation, wholesale and retail trade, etc. comes under this category.

⁶ Demand for these services comes at a later state of industrialisation, when certain changes in the industrial structure take place, for example, the demand for home appliances, cab-drivers, etc.

(especially based on country experiences) support the view that, when an economy grows the sectoral prominence in income as well as employment generation moves from primary to secondary and at a later stage to services sector. Quantum of Studies [Kuznets, 1968, 1972; Fisher, 1939, 1946; Clark, 1957] shows that economic development would be associated with fall in the contribution of sectoral share from primary, which will be taken over by secondary and more by service sector.

Fisher and Clark emphasized the high employment generation potentiality of service sector growth. While Fisher's explanation is based on high income elasticity of demand for services (which are explained on the basis of hierarchy of needs that is income elasticity of demand for services is higher than industrial products which are higher than agricultural products), Whereas Clark stressed the supply side argument. Supply side explanation is based on the low productivity in the sector, which in turn increase employment opportunity. Baumol (1967) and Fuchs (1968) shows that the demand side explanations show minor effect whereas the high employment potential is due to the productivity differentials. Baumol (1967) also shows that, there will be a reduction in the national rate of productivity when service sector becomes the major contributor, because of the difficulty in achieving productivity improvement in the sector compared to industrial sector. Triplett and Bosworth (2000), by showing the case of US economy, which experience an increase in the labour productivity in all sectors due to the influence of Information Technology and purchased intermediate inputs, proved that the Baumol's disease (that is, productivity in services⁷ is less than goods producing sector due to its inherent nature) is resolved.

Along with these explanations, if the economy works in line with Lewis's (1955) theory of economic growth, the problem of surplus labour could not arise as they can be fully absorbed by the industrial sector. According to Todaro and Smith, (2004), the shift will occur in occupational status of the labour force away from rural, agricultural and related non-agricultural activities towards urban-oriented manufacturing and service pursuits. But in most of the developing nations, these surplus laborers are not absorbed by the industrial sector; instead they get accumulated in the urban areas and form a bulk of informal workers. In India, also, we can see that the agricultural

⁷ Triplett and Bosworth (2000) argued that the fall in productivity in services may arise due to the problems in measuring output and also inability to capture new forms of services (for example; problem in measuring the reduction in waiting time of a teller due to the introduction of Automatic Teller Machines in banks)

laborers from the rural areas migrate to urban areas in search of non-farm jobs, and they join the informal economy.

While the traditional theories established the sequence of this structural transformation in the order of primary to secondary thereafter to service, this is not replicated in a modern economy. Due to the opening up of the economies in the context of globalization, the structural transformation of the economy cannot be considered entirely as an endogenous process; a host of exogenous factors are in operation and giving rise to new patterns in the structural change. There are arguments that in a modern economy this sectoral shift need not work in the same order. The transition occurs from primary to service sector in terms of output and employment along with the growth of secondary sector. India too follows this pattern. This pattern of growth of Indian economy was studied exhaustively by Mitra (1988), Kohli (2002), Gordon and Gupta (2004), and Banga (2005) among others. Most of these literatures show that, along with a fall in the primary sector share in Gross Domestic Product, there is a corresponding rise in the share of service sector while secondary sector remained stagnant. But against the expectations of the structural theories, in providing employment, service sector fails to provide to the mass instead primary sector still continue to dominate. Some studies [Singh and Sharma, 1995; Sharma and Jayakumar, 1995; Madheswaran and Dharmadhikar, 2000; Joshi, 2004] are particularly looking into the mismatch between service sector's contribution to output and employment. Different studies that are been already done on various aspects of the service sector growth is been explained in this section.

1.3 Literature Review

Service sector output and employment growth in India

Distinctive feature of India's experience as compared to developed countries is with respect to the pattern⁸ of employment growth. The sector, unlike in the developed countries started growing at a faster rate, along with the secondary sector in the early 1980s and soon it dominated, with major share in GDP. While on the one side service sector is dominating in contributing to Gross Domestic Product, but sector did not

⁸ Historical evidences given by different studies [Fischer, Clark, Fuchs and so on] shows that the sequence of growth of major sector happens in the form, primary sector will dominate in the initial stage of development the with the adoption of new technologies secondary sector will grow and when it reaches a saturation point service sector starts growing. Along with the growth in output sectoral dominance in employment generation also will be the same.

show prominence in terms of employment generation. Majority of work force still depends on the primary sector. The sector contributed about 24.81 per cent to national income during 1950-51 and it increased during the succeeding periods as expected. The growth of service sector in India is as stable compared to growth of other sectors⁹. Mitra (1988) while explaining the sector's growth, points out that, "this proportion is likely to continue to increase further, and by the beginning of the twenty-first century, as much as one-half of India's national income would be contributed by services". This expectation came true; during 2004-05¹⁰, share of service sector in GDP has been about 53.9 per cent where as in employment it is only 26.4 per cent. On the other hand, primary sector which is providing only about 21.6 per cent in GDP is accommodating 54.8 per cent of the total workers.

Another study by Gordon and Gupta (2004) shows that share of services in GDP in developed countries is associated positively with per capita income. They identified services like business services, communication services, banking services as fast growing services and growth of sectors like public administration, personal services, etc. are trend augmenting activities. They also found that the share of services increasing as a country move from low income to higher income levels. Studies like Visaria (1996), Gordon and Gupta (2004), Banga (2005), Sharma and Abraham (2005), tracing the reasons why India is not following the traditional structural change theory? There is also an argument that in a modern economy, the theory may not work. Gordon and Gupta (2004) shows that because there is rise in the labour productivity in service sector, sectoral growth is mainly confined to those sectors where there is need for high skilled laborers, which has been reinforced by technological improvements as well as by efficiency gains from liberalization. They also found that there has been a rise in sectoral inequality¹¹ which may be due to the mismatch between the rise in income and occupational level in the sector.

A notable feature of the growth of the sector has been the growth of skill intensive and high value added sectors like software, communication and financial services. The information services as well as the opening up of the economy have enabled the growth of financial services. This has enhanced the growth of the high productivity

⁹ Similar argument can be seen in Gordon and Gupta (2004).

¹⁰ Refer table: 2.3 and table: 2.5 in Chapter II.

¹¹ They measure sectoral inequality as the sum of absolute difference between income share and employment share in a sector.

segment of the services sector as well as a variety of service activities involving low productivity activities catering to a large mass of people.

Behind the Service Sector Growth

Studies¹² give different explanations for service sector's rapid growth as well as its employment potentials. Though there are other factors, these explanations can be brought out under two major headings: demand side and supply side. *The demand side* factors include; high income elasticity of demand for services¹³, enhanced tradability of services as technology made it possible to splinter-off services from its provider, increasing usage of service input by other sectors, slower productivity growth of the sector which leads to high employment potential, contracting out of manufacturing sector, etc. *The supply side* factors are: trade liberalisation, rising exports, reforms, technological advances and inflow of FDI in services. The advent of information technology (IT) and the knowledge economy also deserves special mention here.

Some of the studies approach the growth of the sector by classifying them on the basis of producers'¹⁴ services and consumers'¹⁵ services. For instance, RBI (2001) shows that there exist strong inter-linkages between services and goods producing sector as there exist very high share of producer services. Similarly, Pillai and Shanta (2005) shows that the high growth of producers' services in Kerala is the cause for service sector's dominance in the state's domestic product.

The demand for services need not come from within the economy itself. Studies like Pillai and Shanta (2005)¹⁶, Chakravarty (2005), Banga (2005) shows that the growing dynamism of India's service sector is due to the growing external market. Opening up of the economy, gives way to competition, caused increased use of services as input in manufacturing sector since 1990, along with the increase in the growth of the sector, have increased the productivity of industrial sector (Banga and Goldar, 2004). There

¹² Gordon and Gupta (2004), Banga (2005), try to provide different reasons of service sector growth in India.

¹³ Fuchs (1965) shows that, calculation of income elasticity is very difficult and thus giving explanations on that basis is also difficult.

¹⁴ Sectors like trade, transport, communication, banking, real estate and other business services come under 'producers' services'.

¹⁵ Hotels, restaurants and other services come under 'consumer services'.

¹⁶ Study is in the context of Kerala's service sector, the high growth of producer services is showing linkage not with the state's production sector but with the production sector of other states.

is also argument that, it is the industrial sector that determines the growth of service sector as we see in Chakravarty (2005).

Thus, some of the reasons pointed out by studies regarding the growth of services are: high income elasticity for the demand for services, increasing input usage of services by other sectors, increase in demand for services from domestic or foreign consumers, rising exports, reforms and technological advances, etc. Due to rapid expansion of communication, banking, business services and community services, contracting out of works in manufacturing sector, external factor like specialization of work, growth of population, reforms that has been initiated in the economy.

Income and Employment Effect: Regional Perspective

Both in the academic and political spheres regional disparities and development received considerable attention. The studies are vast and cover wide range of areas. They include economic indicators like income, industrial concentration, public/private investment, infrastructure, demographic factors, poverty, employment, etc. Most of the studies [Das and Barua, 1996; Rao *et al.*, 1999; Dasgupta *et al.*, 2000; Bhattacharya and Sakthivel, 2004; Kar and Sakthivel, 2007] concentrate mainly on the income side¹⁷. There are few studies concerning employment and its various aspects in a regional perspective. Some of them are mentioned [Schwartzberg, 1963; Das, 1999; Sharma and Abraham, 2005; Mathur, 1983; Ramaswamy, 2007]. The employment potential varies across the different states. Mazumdar (2002) there exists considerable variation in the levels of development across regions over the country and also within each state. Several factors such as age, sex, education qualification, skill, cast and other socio-economic factors affect this. These demand side and supply side factors differ according to different regions and across different periods. The sectoral concentration of output generation of each region is an important factor determining the employment generating capacity.

Das (1999) includes 'employment' as one of the important variable in analyzing indicators relating to economic development. Employment rate shows the ability of an economy to create and cater jobs. Similar to this study Dholakia (2005) while

¹⁷ These studies try to find the contribution of different sector in causing regional inequality in India. Their major findings shows that from about mid 1960s onwards up to pre reform period both primary and service sector was the major contributor for increasing regional inequality and secondary sector was harmonizing the aggregate inequality.

comparing regional imbalance in Canada and India, considers employment rate as one of the variable that measure availability of opportunity to be included in studying regional imbalance. Study by Schwartzberg (1963) on agricultural labourers shows that there has been wide disparity in the rate of labourers depending on agriculture between the northern zone and southern and peninsular interior zones. This may be due to the differences in the demographic histories of these areas. Nair (2004) shows that along with NSDP growth, employment growth has been much higher in the pre reform than post-reform period. There is high correlation between NSDP and employment growth in the pre reform period than in post reform period. Studies particular to service sector shows that, states producing higher output from service sector are not equally providing employment to maximum¹⁸. The sectors growth is much higher than that of commodity producing sectors, Bhattachayra and Mitra (1990).

Quality of Employment

Due to the heterogeneity in the sector, service sector provides varied kinds of job opportunities. The sector is expected to have unit employment elasticity because the high growth of the sector is accompanied by high growth of employment, also. The reasons for high growth of employment are explained in the earlier sections. Fuchs (1965), because of the nature of the work in services sector, there is increased availability of part-time job, enables more women and elder to work, scope for more small firms, possible trend towards greater personalization of work, etc. Studies show that these jobs are mainly occurring in informal sector. Thus in the context of the remarkable growth of the sector, even though the employment growth is not to the expected level, majority of work is generated in the informal sector, calls for the attention of giving importance to study the quality of employment.

Informal Sector

The different aspects of informal sector and its implications are studied exhaustively. Right from defining the sector to the various provisions for better lives are studied. There are controversies in defining as well as measuring informal sector. Expanded definition of informal economy focuses on the nature of employment in addition to the characteristics of enterprises, and also includes all types of informal employment

¹⁸ [Kumar and Mathur, 1996; Sharma and Abraham, 2005].

both inside and outside informal enterprises and certain types of informal wage employment outside informal enterprises. Thus, expanded definition extends the focus from enterprises that are not legally regulated to employment relations that are not legally regulated or protected. Mitra (1998) includes employment in own account enterprises and employment in establishments of size 1 to 9 workers in informal sector for analysis. Mazumdar and Sarkar (2007) on the other hand include workers in all public and semi-public establishments and establishments with less than 10 workers.

One of the reasons for increasing size of informal sector in employment is the low employment elasticity in high productive industrial sector. Studies¹⁹ show that the developmental strategies that link countries with global economy facilitate rural-urban migration. But when organized sector cannot absorb the increasing labour force they get absorbed in the informal sector. In rural areas, in non-farm sector, informal sector is expanding. This may be due to the increase in number of workers thrown out of the agricultural sector and also may be due to increasing commercialization and rise in public work program. In this line, Mitra (1998) says the demand induced component has undergone marked increase leading to this increase in the number of workers in the non-farm informal sector in rural areas.

It is seen that households that depend primarily on informal employment income have significantly higher poverty rates than households with majority of income coming from formal employment. Chen et al (2006), Sakthivel and Joddar (2006) find that 98-99 per cent of workers in informal sector are illiterate. With respect to urbanization and informal sector, Mitra (1998) shows states with low urbanization²⁰ level have high levels of informal sector employment. Similarly, for states where industrialization is low, workforce engaged in informal sector is very high. All these shows that demand for informal sector employment shrinks in the process of economic development.

Dutta (2000), while analysing the quantity and quality of female workers in service sector points out that during post-reform period, there has been an increase in the employment opportunity available for the female workforce. But this increase in

¹⁹ Mitra (1998), Agrawal (2002)

²⁰ Bihar, Orissa, Madhya Pradesh, Rajasthan and Uttar Pradesh.

employment could not result in the availability of improved work. The study also shows that Narasimham committee's structural reorganization of banks created more adverse effect on women employment as it encouraged competition in the working environment. Also, liberalization and globalisation facilitated more demand for women workers in low productive jobs where they can be dispensed easily.

1.4 Limits of Existing Studies

While the service sector had been in academic focus for quite some time in India most of the studies concentrated on the reasons and sustainability of this sector's growth. Very less is understood about the sector's employment capability and conditions of labour. This becomes important especially when the structure and composition of employment in this sector is found drastically different from theoretical predictions and empirical conventions of other countries. Moreover, welfare implications of such an employment pattern in the wake of burgeoning informalisation and stagnation in the goods producing sectors needs to be understood. Hence, it is important to analyse the structure and composition of employment in the service sector. In analyzing this aspect it is pertinent to understand not only the quantum of employment but also the quality of employment in India. And, the quantum and quality of employment are bound to be regionally varied. This study tries to fill the gap identified in the literature by studying the above said aspects.

Issues for Research

The low potential for employment in both agricultural and industrial sector along with growing unemployment in the country has made the service sector the candidate for employment generation. Since, service sector is labour intensive in nature any output growth in the service sector should generate equal growth rate of employment as well. Thus, the growth in the service sector output, though not sustainable in the long run, was thought of as a welcome trend in the wake of growing unemployment in the economy. Mazumdar and Sarkar (2007) rightly points that the rapidly growing service sector with its high employment generation potential emphasizes the sector's significance as a solution to the menace of unemployment. A report of the Planning Commission Task Force (2001) on employment opportunities considered service sector as the major source of employment in future providing about 70 per cent of the new job opportunities in the economy. Eleventh Five-Year Plan document foresees

the potential for creating 40 million additional jobs by 2020, if the service sector grows by 9 per cent per annum since the mid 1990s.

However, the sunny predictions and forecasts notwithstanding, the rate of employment growth in service sector has been consistently falling behind the output growth of the sector (Jha, 2007 and Papola, 2005). The trend has all the more accentuated in the nineties. Sharma and Abraham (2005) have argued that though service sector recorded the employment growth during the last two decades, employment growth in the service sector has slowed down in the nineties. They also argued that service sector output growth and in the employment growth has occurred in a regionally dispersed manner creating regional imbalances.

Along with the severity of slowing down of employment growth in services, there exist the problems of lack of quality employment, which is of no less significance. According to the Employment Market Information (EMI) program of the Ministry of Labour, only 7 per cent of the total employment in the economy is in organized sector (1999), while 93 per cent of the employment is in the unorganized sector, a large share of which is in the low end, lowly paid, services. The growth rate of organized sector employment has been coming down. It decreased from 1.20 per cent per annum during 1983-94 to 0.53 per cent per annum during 1994-00. Thus it is argued that the unorganized sector is emerging as an integral part of the economy (Sharma and Abraham, 2004). The predominance of migrant population in the sector is also a matter of concern (Ramathilagam and Arulselvam, 2002). The increasing share of the unorganized sector raises the issues of job security, income security and conditions of work of these workers.

Moreover, patterns of output growth and employment growth in the service sector points towards widening disparity. Mazumdar and Sarkar (2007) notes that there is a widening income inequality among workers in the service. Similarly feminization of low end service is another area of concern, more and more women get accommodated in the expanding service sector. But the question, whether their benefits really remains. The quantitative change in the employment has not reflected in the qualitative change (Dutta, 2000). There is problem of less remuneration for same work, poor access to labour market due to less education, etc.

Given this background, present study examines the patterns of growth of service sector and raises a number of issues. The employment generation potential of this sector and its role as a solution to the problem of unemployment has much significance. Moreover, the reasons for lag in service sector employment generation and the issues relating the quality, regional variations, gender variations, etc. need to be studied in detail. The presence of growing unorganized sector raises the issues of job security and low wages. The linkages within the sectors and within the services sub-sectors need to be analyzed.

Objectives

The study focuses on above mentioned issues with following specific objectives.

1. To study the trends and patterns of output and employment in the service sector at sectoral and sub-sectoral in a regional perspective and the nature or their relationships thereof.
2. To analyze quality of service sector employment in terms of their various aspects of vulnerability such as job security, income security and conditions of work.

1.6 Data Sources and Methodology

1.6.1 Data source

To fulfill the objectives, this study used three major data sources. These are: Census data, CSO data and data from NSSO schedules. Population figures are taken from Census of India for three decades; namely, 1981, 1991 and 2001. For 1981 population figures, primary census abstract and for 1991 and 2001 'Census-info' CD-ROM provided by census of India are used. Population figure for 2004-05 is gathered from population projections prepared by the technical group on population projections constituted by the National Commission on Population. Data on Gross Domestic Product and Net State Domestic Product have been taken from the National Accounts Statistics published by Central Statistical Organisation (CSO), Government of India. For employment data, both National Sample Survey organisations reports as well as unit level data are also used. For 38th (1983) and 43rd (1987-88) round, Sarvekshana is used and for 50th (1993-94), 55th (1999-00) and 61st (2004-05) rounds, NSSO reports were employed. Unit level data for the 61st round provided by NSSO is used for analysing the quality of employment.

1.6.2 Methodology

The time period taken for the analysis in this study is, from 1983 to 2004-05, based on the quinquennial survey periods on employment and unemployment in India done by National Sample Survey Organisation. During the whole period between 1983 and 2004-05, five quinquennial survey (that is from third to seventh quinquennial surveys in the series) on employment and unemployment have been done. Following are the survey rounds taken for the analysis with the year in which survey was held; 38th held in 1983, 43rd during 1987-88, 50th which held during 1993-94, 55th in 1999-00 and 61st, which is the latest round held during 2004-05. Corresponding to these five time points the output/income data (GDP and NSDP) are taken from the National Accounts Statistics and population figure which were used to make the percentage figures of employment as given by the NSSO reports are interpolated using the decadal census.

For the analysis, Service sector in the study includes industries from 50 to 99 in National Industrial Classifications (1998). With regard to employment, though NSSO is providing other estimates of employment such as Usual Principal and Subsidiary Status (UPSS), Current Daily Status (CDS), etc. which represents the larger part of the intermittent employment; Usual Principal Status (UPS) estimates are taken as it represent the magnitude of stable employment. They represent the number of persons who are employed for a relatively larger part of the year; specifically more than half of the year. Thus, percentage of workers in UPS by broad industry division is taken and for estimating the actual number of the total workers the following data sources are used showing different methods of estimation.

Furthermore, statistical methods such as *compound annual growth rate*, *shares*, *correlation*, *rank correlation*, *coefficient of variation* are used. For finding the relation between output and employment, *employment elasticity* is calculated. To estimate the sectoral contribution to growth and growth change, the growth rate decomposition is done for all periods. Further, to find the economic base of a locality, *location quotients* are calculated for output as well as employment. Various quality indices were computed to measure the quality of workers. All these methods are explained in detail in the respective chapters.

1.7 Chapter Scheme

The study is divided into four chapters. Chapter one introduces the study and highlights the major theories and literature on which the study is based on. Chapter two analyses the output and employment linkages, with specific focus on the service sector in India, both at the All India and at the regional level. In chapter three, we analyse the quality of employment that is generated in service sector. And, finally chapter four summarizes and draws the major conclusions of the study.

Chapter II

Output and Employment Growth in the Service Sector: A National and Regional Perspective

Introduction

Service led growth in India observed since the early 1980s has drawn the attention of a number of researchers, economists and policy makers. Most of the studies [Mitra, 1988; Verma, 2006; Gordon and Gupta, 2004; Banga, 2005 and Bosworth *et al.*, 2007] focused on characterizing the structural change, and examining its implications on growth, welfare and sustainability. By its very nature service production is more labour intensive and considered as best suited to the resource endowments of developing countries, which are abundant in labour supply. Going by the experience of developed countries, service sector has been shown to be highly labour-absorbing as the often reported employment output elasticity of this sector is near unity. This makes the emerging importance of service sector in Indian economy, a welcome development, especially during a phase when India is confronted with the issue of growing unemployment. However, our understanding on the extent to which this sector in the Indian economy has contributed towards employment generation and other related issues remains rudimentary. Hence, this chapter explores the different aspects of output and employment growth in the service sector since the early 1980s.

The issue of employment becomes all the more important in the context of growing demand for inclusive growth. After undertaking the economic reforms including trade and investment liberalization in the early 1990s there has been remarkable changes in the structure of the economy accompanied by changes in the employment generation capacity. For example, studies have shown that the period immediately following liberalization in India was characterized by growth without employment often referred to as “*jobless growth*” [Joshi, 2004; Sharma and Abraham, 2005 and Dasgupta and Singh, 2005]. This period also witnessed the emergence of some of the new technology sectors such as the telecommunication industry, Information technology industry, and new economy financial sectors; namely, insurance and banking. While most of these sectors recorded remarkably

high growth rates, their employment generation capacity has been low in comparison with other services¹.

Given above backdrop, present chapter analyses the trends in output and employment growth in the services sector, especially in the post liberalization period. Further, it also analyses the regional patterns in the observed trends. This chapter begins with a discussion on the data and methodology and analyses the trends and patterns in output and employment growth with focus on service sector. Analysis is done first to see the impact of reforms on the quantity of employment in the sector and major sub-sectors and the result substantiate the 'jobless growth' argument of the 90s. Further NSSO round-wise results, gives a different picture. This exercise is done for 'All India', Rural, Urban, Male and Female categories. The regional trends and patterns are also looked towards the end of this chapter.

2.1 Data and Method

To analyse the 'national' trends and 'regional' pattern of output and employment growth in service sector the following methods are used.

Gross Domestic Product (at factor cost) at the national level and Net State Domestic Product (at factor cost) at the regional level are taken as indicators for output produced by different sectors in the economy. Data is taken from National Accounts Statistics published by Central Statistical Organisation. Since the GDP data was given in two base years that is, 1993-94 and 1999-00 prices, and NSDP was available in 1980-81 and 1993-94 prices, two series were spliced into 1993-94 prices.

Employment figures are taken from National Sample Survey Organisation's five quinquennial survey rounds on Employment and Unemployment- 38th (1983)², 43rd (1987-88), 50th (1993-94), 55th (1999-00) and 61st (2004-05). Data on employment is adjusted³ with the population figures as the NSSO report give percentages of workers in each sector

¹ For a detailed account of the implications of ICT sector, see Joseph (2002).

² Years in bracket are survey periods.

³ Population figures for survey periods are interpolated from the census figures of 1981, 1991 and 2001. For year 2004-05 population figures are taken from the population projections for India and states prepared by the technical group on population projections constituted by the National Commission on Population, May 2006.

for 'All India' and the states. Employment figures are calculated for male and female in urban and rural India separately and summed up to obtain the total figure for each sector's employment.

2.1.1 Employment Estimates: Some Measurement Issues

Depending upon the data source that is used for analysing employment issues, the results vary. Table 2.1 shows that depending on data sources used to obtain actual figures of total workers in the economy, the rate of employment vary. The commonly used data sources for analysing employment level and growth are National Sample Survey Organization's (NSSO) quinquennial employment-unemployment surveys, and the population Census. While the NSSO provides estimates of total employment and their sectoral shares, Census provides the total number of workers. Total number of workers is usually calculated using three methods. National Sample Survey Organization, in their report, provides mainly the percentage figures of workers in each industry. Along with this, report provides the actual value of workers by adjusting with multiplier and making the sample figure for economy as a whole. Other two sources mentioned in Table 2.1 are provided by Census. '*Main worker*' data provided by census can be considered similar to the workers accounted on the basis of Usual Principal Status in NSSO. But, since census is carried out once in a decade and the latest data available is for 2001, extrapolation has to be done for obtaining data for later periods. However, the main constraint in using this estimated data is that we need to assume that the rate of growth of employment (of main workers) to grow at same annual growth rates for the fifteen year period 1991 to 2004-05). The third method discussed below has a clear advantage over this method. This method is to take *census-population* figures, and use the worker population rates to arrive at the total number of workers. Here, however, we get the population projections provided by The National Commission on Population (2006) 'Report of the Technical Group on Population Projections' which provides the projected values from 2001 to 2026, while the worker population rates are taken from the NSS estimates.

The three methods described above provide us with different levels and growth of employment. What growth rate one arrives at, therefore, is crucially dependent on the choice of data source. For the purpose of illustration, we shall present the estimates by

three earlier studies that employed these three methods (see Table 2.1). It is observed from the table that, three studies have adopted the Usual Principal and Subsidiary Status (UPSS) of workers for their analysis but different data sources. Estimates of growth in total employment by different studies using different sources for the period 2004-05 are as follows: 2.89 per cent using census-population figures (*see* Rangarajan, 2007), 2.25 per cent using total worker figure provided by NSSO (Srinivasan, 2007) and 2.96 per cent as mentioned by Mitra (2007).

Based on these three methods the employment growth rates for Usual Principal Status workers calculated in this study is given in Table 2.1. This study, as mentioned in the introductory chapter, considers workers according to Usual Principal Status (UPS) only. Estimates based on UPS using different data sources shows employment growth rates: 2.53 per cent using census population figures, 0.99 per cent using data on main workers provided by census and 1.84 per cent while using the total workers figure given by NSSO.

Table 2.1: Growth in Employment During 1999-00 to 2004-05: Comparison (Per cent)

	Rangarajan, 2007 (UPSS)	Srinivasan, 2007 (UPPS)	Mitra, 2007 (UPSS)	Calculated* (UPS)	Calculated** (UPS)	Calculated** (UPS)
Source of data	Population	NSSO value	-	Population	NSSO value	Census Main worker
Growth rates	2.89	2.25	2.96	2.53	1.84	0.99

*Note: * Own calculations.*

Since, this study requires number of workers both at the aggregate and at disaggregates levels, the data provided by NSS, in terms of simple shares is not enough. It is also a heroic assumption to take a constant annual growth rate for 15 years, which would be required if one is to use the census-main worker method. Hence, this study would employ or adopt the census-population method in estimating the total workers and their sectoral shares, despite its obvious limitation that these estimates are based on projected population figures.

The reference period of the study is from 1983 to 2004-05, which is divided into four sub-periods based on the survey periods: 1983 to 1987-88, 1987-88 to 1993-94, 1993-94 to

1999-00, 1999-00 to 2004-05 respectively. Apart from this classification, the whole period is divided into pre-reform period (1983 to 1993-94) and post-reform period (1993-94 to 2004-05) to analyse the variations in output and employment performance during these two periods. Since NSSO reports do not give separate data for 'Financial Intermediary, Real Estate, etc.' and 'Public Administration, Defence, Personal Services, etc.', for 38th and 43rd rounds, instead they are clubbed and is given as 'Other Services'. Therefore, the estimates for those sub-sectors are done from 55th round onwards.

2.2 Output and Employment in India's Service Sector: Trends and Patterns

In this section we shall explore the growth in employment in the context of generally noted turnaround in output growth in India since the early 1980s. As a prelude to addressing this question we shall begin with a detailed examination of the trends and patterns in output and employment under different periods identified above. Though the focus of analysis is on the service sector we have also presented broad trends observed in the primary and secondary sector such that the trends observed in the service sector could be seen in a comparative perspective.

2.2.1 Output Trends

The estimated growth rates in three broad sub sectors of the economy (that is; primary, secondary and services) and different sub-components of the service sector during the period of analysis (1983-2004) is presented in the Table 2.2. As we move from the pre-reform to post-reform period, while there has been an improvement in the rate of growth of GDP (from 5.4 per cent to 6.31 per cent) as well as that of secondary and service sector, that of primary sector declined (*see* Table 2.2). The table also shows that the output growth declined in the primary and service sector as we move from first sub-period of the post-reform phase to the second sub-period.

Regarding the growth of different sub-sectors of the service sector following observations may be made. During pre-reform period, 'Other Services' recorded growth rate higher than the service sector average while that of two other important sectors ('Trade, Commerce, Restaurant, etc' and 'Transport, Storage, Communication, etc.')

As we move to the post-reform period, we find a different pattern that is the rate of growth of 'Other Services' becomes lower than that of the service sector

average and those sectors lagged behind in the pre reform period forged ahead. The decline in the growth rate of GDP in the service sector in the last period was due to the fall in the growth rates of sub-sectors like 'Trade, Commerce, Restaurant, etc.' and 'Other Services'. Within Services the fastest growing sub-sectors were 'Trade, Commerce, Restaurant, etc.' and 'Transport, Storage, Communication, etc.' Fall in 'Other Services' is reflected in both the sub-sectors 'Financial Intermediary, Real Estate, etc.' and 'Public Administration, Defence, Personal services, etc.'

Table 2.2: Growth in GDP, Service Sector and Sub-Sector Output (Per cent)

	1983 to 1993-94*	1993-94 to 2004-05**	1983 to 1987-88	1987-88 to 1993-94	1993-94 to 1999-00	1999-00 to 2004-05
Primary	3.45	2.73	1.45	4.80	3.46	1.86
Secondary	5.69	6.79	5.99	5.49	6.77	6.82
Service	6.86	8.02	7.62	6.37	8.35	7.65
Total GDP	5.40	6.31	5.02	5.66	6.55	6.04
Trade, Commerce, Restaurant, etc	5.85	8.73	6.31	5.54	9.29	8.05
Transport, Storage, Communication, etc.	6.29	10.45	7.33	5.60	8.66	12.63
Other Services Of which:	7.60	6.96	8.45	7.05	7.81	5.96
Financial Intermediary, Real Estate, etc	9.57	7.30	10.02	9.28	7.78	6.71
Public Administration, Defence, Personal Services, etc.	6.05	6.64	7.34	5.21	7.83	5.22

Source: Estimated using data from National Accounts Statistics

*Note: * Pre-reform period and ** Post-reform period.*

Coming to the structural change that resulted from the observed growth, it is noted that the pace of structural transformation accelerated in the post reform period. To illustrate, while the share of primary sector declined by around six per cent during the pre-reform period, the observed decline was of the order of 10 per cent in the subsequent period. Similarly, in case of service sector, the observed increase was about six per cent and nine per cent respectively in the two periods under consideration. When it comes to different sub-sectors within the service sector there was no major change except the second half of the post-reform period. During this period the share of 'Transport, Storage, Communication,

etc.’ increased by three per cent point and that of ‘Other Services’ declined by about four per cent (see Table 2.3).

Table 2.3: Changing Structure of GDP and Service Sector Output (Per cent)

	1983	1987-88	1993-94	1999-00	2004-05
Primary	37.94	33.05	31.49	26.40	21.60
Secondary	22.67	23.52	23.31	23.61	24.49
Service	39.39	43.42	45.20	49.99	53.90
Total GDP	100	100	100	100	100
Share within Service Sector					
Trade, Commerce, Restaurant, etc	31.35	29.86	28.47	29.95	30.42
Transport, Storage, Communication, etc.	16.01	15.84	15.16	15.40	19.25
Other Services	52.65	54.30	56.38	54.65	50.33
Of which:					
Financial Intermediary, Real Estate, etc.	21.31	23.28	27.35	26.47	25.26
Public Administration, Defence, Personal Services, etc.	31.34	31.02	29.03	28.17	25.06
Total Service	100	100	100	100	100

Source: Estimated using data from NAS.

Having examined the growth and structural change let us now proceed to analyse contribution of different sector to the observed output growth. Contribution to growth has been estimated across four different sub-periods (see Table 2.6, method of calculation is given in appendix). The estimates shows that the contribution of the primary sector declined steadily after a substantial increase from the first period to second period and its contribution in the terminal period (seven per cent) has been only about one-fourth of its contribution in the second period. As there has been no major change in the contribution of secondary sector, the bulk of the contribution has been by the service sector. The table reveals that, after an initial decline during the second period, contribution of the service sector has been increasing steadily to reach over 65 per cent in the terminal period.

2.2.2 Employment Trends

Having examined the growth and structural change in terms of output, we now move on to the employment generation in major sectors during the period of analysis. This study supports the argument that the economy experienced decline in the employment growth rate during post-reform phase. Table 2.4 shows that this fall in total employment growth

rate is reflected in primary as well as service sector. In spite of the increase in the secondary sector's growth in the post-reform period, the fall in both primary as well as the service sector caused the fall in the total employment growth rate. But the fall in total employment in the liberalization phase has not been uniform across all sub-periods of the post-reform period. The total employment growth rate in the second half of the post-reform period in fact increased from 1.58 per cent in 1999-00 to 2.55 per cent in 2004-05. This increase was seen in all major sectors.

Table 2.4: Growth in Employment Across Different Service Sub-Sectors in India (Per cent)

	1983 to 1993-94*	1993-94 to 2004-05**	1983 to 1987-88	1987-88 to 1993-94	1993-94 to 1999-00	1999-00 to 2004-05
Primary	1.85	0.80	1.15	2.32	0.66	0.97
Secondary	2.89	4.16	5.25	1.36	2.86	5.73
Service	4.13	3.47	4.39	3.96	3.11	3.91
Total	2.47	2.01	2.42	2.52	1.58	2.55
Trade, Commerce, Restaurant, etc	4.15	5.37	5.17	3.47	6.53	4.00
Transport, Storage, Communication etc	4.60	5.22	6.16	3.58	5.36	5.05
Other Services Of which:	4.00	1.23	3.35	4.43	-0.51	3.36
Financial Intermediary, Real Estate, etc.	-	7.26	-	-	5.21	9.76
Public Administration, Defence, Personal Services, etc.	-	0.36	-	-	-1.19	2.25

Source: Estimated using data from National Accounts Statistics

*Note: * Pre-reform period and ** Post-reform period.*

While service sector output growth rate increased during the post-reform period, employment growth rate declined from 4.13 per cent to 3.47 per cent (Table 2.4). 'Trade, Commerce, Restaurant, etc.' and 'Transport, Storage, Communication, etc.' showed an increase in the employment growth rates; whereas, 'Other Services' showed a steep fall from four per cent to 1.23 per cent growth rate. Growth rate of 'Other Services' is found lower than that of the service sector average growth rate in both pre and post-reform period. Though the post-reform phase shows a fall in the total employment growth rate, it shows an increase in the second half of the period. Both 'Trade, Commerce, Restaurant, etc.' and 'Transport, Storage, Communication, etc.' shows a fall in the growth rate but

employment growth rate of 'Other Services' increased (from -0.51 to 3.36 per cent) during this period. More dis-aggregate level analysis of the sector 'Other Services' shows that both 'Financial Intermediary, Real Estate, etc.' and 'Public Administration, Defence, Personal Services, etc.' experience the increase in the growth rate.

Similar to the structural shift in output creation, employment scenario also shows acceleration in the structural change in the post reform period (see Table 2.5) But the only difference is that the sectoral shares still continue to be outweighed by the presence of primary sector employment, though the relative importance of services sector has been rising. Services sector, which accommodated 19.1 per cent of the workers has increased to 26.4 per cent in 2004-05, while that of primary sector declined from 66.7 to 54.8 per cent during the same period. Even though for 'Trade, Commerce, Restaurant, etc.', employment growth fell, the sub-sector have major share in service sector (43.7 per cent) during 2004-05. Sub-sector 'Other Services', which is the sole reason for the growth in employment in the second half of the post-reform period is also having large share (39.5 per cent) but is coming down slowly. Of the two components of 'Other Services', 'Financial Intermediary, Real Estate, etc.' and 'Public Administration, Defence, Personal Services, etc.' while the growth rates are increasing in the later half of post-reform period (1999-00 to 2004-05), they accommodates 6.9 per cent and 32.6 per cent of total service sector employment, respectively.

Since the improvement in employment growth rate has been on account of 'Other Services', the issue of kind of employment that is been generated has to be examined in detail because the sector, among other kinds of work, also consist of low end, low paid work. For instance, if we look into more disaggregate level; the sector occupies more workers in 'Public Administration, Defence, Personal Services, etc.' compared to 'Financial Intermediary, Real Estate, etc.'⁴. The sub-sector 'Public Administration, Defence, Personal Services, etc.' along with the regular public servants, also consist of workers informal in character, without any social security benefits, very poor conditions of work, low wages, and so on. At this level of aggregation, however, one cannot conclusively

⁴ The result got from analysing the sectoral distribution of workers across 26 sub-sectors of service sector. For detailed result refer Table 12 in Chapter III.

reflect on the quality of employment, though the trend seems to show that the employment growth is occurring at low-end informal services. One, conclusive observation at this point is that the decline in employment growth experienced during the early reform period has been reversed and this is pervasive across all sectors.

Table 2.5: Changing Structure of Employment in India (Per cent)

	1983	1987-88	1993-94	1999-00	2004-05
Primary	66.7	63.3	62.5	59.2	54.8
Secondary	14.2	16.0	14.9	16.1	18.8
Service	19.1	20.8	22.6	24.7	26.4
Total employment	100	100	100	100	100
Share within Service Sector					
Trade, Commerce, Restaurant, etc.	35.8	36.9	35.8	43.6	43.7
Transport, Storage, Communication, etc.	13.3	14.2	13.9	15.9	16.8
Other Services	50.9	48.9	50.2	40.6	39.5
Of which:					
Financial Intermediary, Real estate etc	-	-	4.7	5.3	6.9
Public Administration, Defence, Personal Services etc	-	-	45.6	35.3	32.6
Service Sector Total	100	100	100	100	100

Source: Estimated using data from NSSO

The contribution of different sectors to the total employment growth in each period is estimated and the results are presented in Table 2.6. Estimates shows that primary sector's contribution to the growth rate in respective periods though increased in the second half of pre-reform period, it has come down drastically and this fall is taken up by the rise in the sectoral contribution of both secondary as and service sector. While the structural change in terms of contribution to total output growth is in favour of service sector, its prominence is not clear in the employment front. Especially in the second half of the post-reform along with service sector, secondary sector also contributes major part of the total employment growth rate.

2.2.3 Comparing Output and Employment Growth

A comparison of both output and employment growth would give a better understanding of the output-employment relation that structural theories talks about. In what follows we shall first compare the contribution of different sectors to output and employment growth followed by an analysis of the issue by estimating the elasticity.

Table 2.6: Sectoral Contribution to Total Output and Employment Growth in India (Per cent)

	1983 to 1987-88	1987-88 to 1993-94	1993-94 to 1999-00	1999-00 to 2004-05
Output growth				
Primary	10.12	27.28	14.97	14.97
Secondary	27.34	22.72	24.15	27.05
Tertiary	62.55	50.00	60.88	65.70
Total	100	100	100	100
Employment growth				
Primary	30.69	57.63	25.30	21.55
Secondary	32.92	8.28	28.15	39.27
Tertiary	36.39	34.09	46.55	39.18
Total	100	100	100	100

Source: Estimated using data from NAS and NSSO for output and employment respectively

Output and Employment Growth Rate: While the rate of growth of GDP improved during the post-reform period compared to pre-reform period, the total employment growth shows a fall. Similar results can be observed in the case of service sector and its sub-sectors except 'Other Services'. The sub-sector 'Other Services' shows a fall in both output and employment growth during the same period. Further classification of the post-reform period shows that, during the second half of the post-reform period, while the 'total' as well as 'Service Sector' GDP growth rate have fallen, the employment growth rate of the same have increased. Within service sector 'Other Services' and its sub-sectors also follows the similar trend.

Sectoral Contribution Total Growth Rate: While Service sector's contribution is dominating in total output growth rate in all the studied periods (Table 2.6), It is relatively less in the case of employment growth rate. Where service sector's contribution to GDP growth rate from 1993-94 to 1999-00 and 1999-00 to 2004-05 is more than 60 per cent, its contribution to employment growth rate is only 46.55 per cent and 39.18 per cent respectively. Though the employment situation in India has improved from the period 1993-94 to 1999-00 to the period 1999-00 to 2004-05, this growth mainly came from secondary sector and not from services. While, the service sector contribution to the growth rate of GDP increased from 60.88 per cent to 65.70 per cent from the period 1993-94 to 1999-00 to the period 1999-00 to 2004-05; its contribution to employment growth rate came down from 46.55 per cent to 39.18 per cent. It is matter of concern as the

service sector which is having highest contribution to the growth rate in the economy is adding less to the employment growth rate.

Employment Elasticity: While comparing output and employment growth, the question that arises is about the jobless growth that literature talked about in the 1990s. Broadly, the jobless growth trend tends to persist in the post-reform period, though there are changes to be noticed after 1999-00. The total employment elasticity declined from 0.46 in the pre reform period to 0.32 in the post-reform period (*see* Table 2.7). During the period 1999-00 to 00-04 the elasticity was 0.42. But in terms of employment absorption service sector seems to be problematic. By its very nature, the service sector is expected to have high employment elasticity compared to the goods producing sectors of the economy. But Indian situation appears to have been different⁵. To begin with, it is to be noticed that the employment elasticity of service sector has never been anywhere near unity. The maximum achieved elasticity has been 0.62 during 1987-88 to 93-94. Also, during the post reform period the employment elasticity of the service sector was even less than secondary sector, which traditionally has a high capital intensity and poor labour absorption capacity. Strangely enough, as we move towards the last period the elasticity for service sector turns out to be even lower than the primary sector. This brings out the poor employment absorption capacity of the peculiar service sector growth that India is going through.

The fall was confined to first half of the post-reform period when elasticity was 0.37. Latter half of post-reform period shows a gradual picking up and it was around 0.51. Among sub-sectors, employment elasticity of 'Transport, storage, communication etc' has been decreasing continuously. The decline in the elasticity has been entirely due to the secular decline in the growth rate of employment along with spiraling growth rate of output in this sector. Thus, this sector quite clearly shows trends in increasing labour displacing technology and capital propelling the growth of this sector. This is especially true in the case of the growth of communication technology wherein the transition from analog to digital technology has displaced many workers in diverse areas.

⁵ Literatures shows, compared to other countries, India is having low employment elasticity in service sector: SAARC (2005)

Table 2.7: Estimates of Employment Elasticity

	1983 to 1993-94*	1993-94 to 2004-05**	1983 to 1987-88	1987-88 to 1993-94	1993-94 to 1999-00	1999-00 to 2004-05
Primary	0.54	0.29	0.79	0.48	0.19	0.52
Secondary	0.51	0.61	0.88	0.25	0.42	0.84
Service	0.60	0.43	0.58	0.62	0.37	0.51
Total	0.46	0.32	0.48	0.45	0.24	0.42
Trade, Commerce, Restaurant, etc.	0.71	0.62	0.82	0.63	0.70	0.50
Transport, Storage, Communication, etc.	0.73	0.50	0.84	0.64	0.62	0.40
Other Services Of which:	0.53	0.18	0.40	0.63	-0.07	0.56
Financial Intermediary, Real Estate, etc	-	0.99	-	-	0.67	1.45
Public Administration, Defence, Personal Services, etc.	-	0.05	-	-	-0.15	0.43

Source: Estimated using data from NAS and NSSO.

*Note: * Pre-reform period and ** Post-reform period.*

The revival in the elasticity of 'Other Services' sub-sector is remarkable and this should be read along with the sub-sector's employment growth during the period. Within the sub-sectors, the employment elasticity of 'Financial Intermediary, Real Estate, etc.' is promising in that the employment elasticity is near or greater than unity. The revival in elasticity after 1999-00 with regard to total economy along with the increase in all major sectors is a welcoming feature. This challenge the so-called '*jobless growth*' features of the economy.

2.2.4 Patterns of Employment: Rural, Urban Distribution

Studies show that, pattern and structure of employment in India is highly different in rural and urban sections of the economy. While the majority of workers are occupied in primary sector in rural area, the sector contributes least employment in urban area. In the rural areas primary sector continues to dominate the employment share accounting nearly one-fourth of the total employment, while in urban areas service sector has the highest share, (nearly 60 per cent) of the total employment (see Table 2.8). As we expect in a growing economy, the share of primary sector had declined both in rural and urban areas as we move from 1983 to 2004-05 with a corresponding increase in the service sector. The share

of service sector employment increased from 10.3 per cent to 15 per cent in rural areas and in urban areas it increased from 53 to 57 per cent. Even though there are substantial difference between the size of service sector employment in rural areas and urban areas it is interesting to note that within the sub sectors of service sector the shares are more or less similar for rural and urban areas, with the largest share of employment being accounted in the 'other services', and, Trade, Commerce, Restaurant, etc'. Within the 'Other Services' the largest share of employment was in the 'Public Administration, Defence and Personal Services', with a large share of them being in the Personal Services.

Employment growth rate has increased in both rural and urban categories during 1999-00 to 2004-05 after the decline in employment growth during 1993-94 to 1999-00 (Table 2.8). However, it is to be noted that in the rural areas the primary sector employment growth had continued to stagnate at less than one per cent. At the same time the growth rate of service and secondary sector employment was much higher at 4.4 per cent and 6.4 per cent, which were much higher compared even to the urban areas. The rise in employment share in the rural areas and urban areas in non-agricultural sectors, especially in the service sector should be seen in the wake of stagnation of agricultural sector in rural areas, the traditional employment provider. To a large extent the employment growth in these sectors are residual employment from the agrarian sector migrating and moving to the low-end service sectors in rural and urban areas Papola (2005). This is reflected in the increase in employment growth in the 'Other Services' of the economy.

Table 2.8: Employment Share in Rural and Urban India (Per cent)

Sectors/Sub-sectors	1983 to 1987-88	1987-88 to 1993-94	1993-94 to 1999-00	1999-00 to 2004-05	1983	1987-88	1993-94	1999-00	2004-05
	Employment Growth Rate Rural				Employment Share in Rural Area				
Primary	1.16	2.28	0.79	0.88	80.4	77.3	77.6	75.6	71.3
Secondary	7.32	0.14	2.94	6.46	9.3	11.3	10.0	11.1	13.7
Service	4.81	3.58	2.54	4.43	10.3	11.4	12.3	13.3	15.0
Total Employment	2.17	2.20	1.24	2.05	100	100	100	100	100
'Trade, Commerce, Restaurant, etc.'	5.36	3.00	4.42	6.12	37.3	38.1	36.8	41.1	44.5
'Transport, Storage, Communication, etc.'	15.33	3.41	7.53	6.22	8.9	13.0	12.9	17.2	18.7
'Other services'	2.33	4.06	-0.57	1.84	53.8	48.9	50.3	41.8	36.8
Of which									
'Financial Intermediary, Real Estate, etc.'	-	-	4.65	8.56	-	-	2.5	2.9	3.5
'Public Administration, Defence, Personal Services, etc.'	-	-	-0.89	1.27	-	-	47.7	38.9	33.4
Total Service Sector Employment	4.81	3.58	2.54	4.43	100	100	100	100	100
	Employment Growth Rate Urban				Employment Share in Urban Area				
Primary	0.73	3.12	-2.39	3.17	13.38	12.11	11.76	8.69	8.36
Secondary	2.90	2.78	2.78	4.92	33.37	32.91	31.31	31.52	33.02
Service	4.08	4.24	3.51	3.54	53.26	54.98	56.93	59.79	58.62
Total Employment	3.26	3.64	2.66	3.96	100	100	100	100	100
'Trade, Commerce, Restaurant, etc.'	5.02	3.83	8.01	2.58	34.65*	35.92*	35.08*	45.29*	43.21*
'Transport, Storage, Communication, etc.'	1.80	3.68	3.85	4.10	16.58*	15.17*	14.69*	14.99*	15.40*
'Other services'	4.16	4.71	-0.46	4.40	48.76*	48.90*	50.23*	39.73*	41.39*
Of which									
'Financial Intermediary, Real estate, etc.'	-	-	5.38	10.09	-	-	6.19*	6.90*	9.37*
'Public Administration, Defence, Personal Services, etc.'	-	-	-1.44	3.03	-	-	44.04*	32.83*	32.02*
Total Service Sector Employment	4.08	4.24	3.51	3.54	100	100	100	100	100

Source: Estimated using NSSO data.

2.2.5 Patterns of Employment: Gender Dimension

Rapid employment growth in the sub-sector 'Public Administration, Defence, Personal Services' seems to be accommodating more and more female workforce. The increasing opportunity of work in this sector is mainly because of the of the sector's heterogeneous nature and mainly because of the availability of such work due to urbanisation. The sector is considered to have unsecured and low quality jobs. The sector comprises of 'Public Administration and Defence, compulsory social security', 'Education', 'Health and Social Work', 'Other Community, Social and Personal Service Activities', Private Household with employed persons, Extra Territorial Organisations and bodies'. Of this very few are having regular workers and eligible for social security. More than 90 per cent of workers in this sector are informal workers and are in vulnerable conditions of work. Chapter III deals with this in detail.

Total employment growth of male and female has increased during the second half of the post-reform period (*See* Table 2.9 and Table 2.10). This is because of the increase in the growth of employment in all the three major sectors of the economy. Another important feature is that both male and female categorization shows that majority of workers still depending on primary sector though the share is falling continuously. That is, 49.25 per cent of male and 69.98 per cent of female are accommodated in the primary sector in 2004-05. Fall in employment growth in primary sector is compensated by increase in the employment opportunity in secondary and service sector. Service sector occupies 30.21 per cent and 16.08 per cent of male and female work force respectively.

With regard to the sub-sectors of service sector, both for male and female, employment growth is increasing for 'Other Services', where as the employment growth is declining for 'Trade, Commerce, Restaurant, etc.' and 'Transport, Storage, Communication, etc.' Though growth rate have decreased from 6.58 per cent to 4.06 per cent in 1999-00 to 2004-05, male workers are mainly engaged in 'Trade, Commerce, Restaurant, etc.' with a share of 46.65 per cent in 2004-05, and was continuously increasing over the whole period. The sub-sector 'Financial Intermediary, Real Estate, etc.' is accommodating minimal work force; still employment growth is very high in this sector in both categories.

Table 2.9: Employment Growth Rate Male and Female Category (Per cent)

	1983 to 1987-88	1987-88 to 1993-94	1993-94 to 1999-00	1999-00 to 2004-05
Male				
'Trade, Commerce, Restaurant, etc.'	5.55	3.78	6.58	4.06
'Transport, Storage, Communication, etc.'	6.42	3.53	5.35	5.04
'Other services'	3.32	4.37	-1.30	2.50
'Financial Intermediary, Real Estate ,etc.'	-	-	5.18	9.69
'Public Administration, Defence, Personal Services, etc.'	-	-	-2.22	0.94
Total	2.48	2.90	1.56	2.42
Female				
'Trade, Commerce, Restaurant, etc.'	2.79	1.24	6.07	3.45
'Transport, Storage, Communication, etc.'	-2.47	5.48	5.83	5.41
'Other Services'	3.47	4.65	2.13	5.72
Of which:				
'Financial Intermediary, Real Estate , etc.'	-	-	5.50	10.30
'Public Administration, Defence, Personal Services, etc.'	-	-	1.95	5.43
Total	2.19	1.52	1.61	2.85

Source: Estimated using NSSO data

As mentioned in other studies⁶, female work force has been concentrating mainly in 'Public Administration, Defence, Personal Services, etc.' Not only the share is high it is increasing as per the 61st round compared to the share in 55th round that is from 66.06 per cent to 68.29 per cent in this sector. The sector is growing at a rate of 5.43 per cent during the period between 55th and 61st round, which was only about 1.61 per cent during the period between 50th and 55th round. The kind of work available in the sector raises concern about the quality of employment. Male counterparts in the sub-sector are about 26.51 per cent of the service sector and that too is coming down continuously from 50th round onwards. Of the total rural service female work force, 59.21 per cent are in 'Public Administration, Defence, Personal Services etc' and is growing at 3.78 per cent in the latest period (*refer* Table 1 in Appendix).

⁶ Sakthivel and Joddar (2006), majority of female work force are engaged in unorganised non-farm sector. Mitra (2008) shows that 36.5 per cent of urban female workers are in 'Public Administration, Defence, Personal Services etc'.

Table 2.10: Employment Share-Male and Female Categories (Per cent)

	1983	1987-88	1993-94	1999-00	2004-05
Male					
Primary	62.00	58.70	57.92	54.06	49.25
Secondary	15.58	16.93	16.09	17.55	20.54
Tertiary	22.43	24.37	26.00	28.39	30.21
Total employment	100	100	100	100	100
'Trade, Commerce, Restaurant, etc.'	36.67	37.97	37.47	45.84	46.65
'Transport, Storage, Communication, etc.'	15.40	16.47	16.02	18.28	19.49
'Other Services' Of which:	47.93	45.55	46.51	35.89	33.86
'Financial intermediary, real estate etc'	-	-	4.92	5.55	7.35
'Public Administration, Defence, Personal Services, etc.'	-	-	41.60	30.33	26.51
Total Service Sector Employment	100	100	100	100	100
Female					
Primary	77.76	74.96	75.26	73.48	69.98
Secondary	11.12	13.51	11.66	12.04	13.94
Tertiary	11.12	11.53	13.08	14.48	16.08
Total Employment	100	100	100	100	100
Trade, Commerce, Restaurant, etc.'	31.16	30.77	26.67	31.19	28.91
Transport, Storage, Communication, etc.'	2.69	2.15	2.39	2.75	2.80
'Other services' Of which:	66.15	67.07	70.94	66.06	68.29
'Financial Intermediary, Real Estate, etc.'	-	-	3.2	3.62	4.63
'Public Administration, Defence, Personal Services, etc.'	-	-	67.7	62.44	63.66
Total Service Sector Employment	100	100	100	100	100

Source: Estimated using NSSO data.

The accumulation of distress driven workers in non-agricultural sector is affecting both urban as well as rural female workforce more compared to male counterparts. This is because, both share as well as growth rate of female work force of the urban as well as rural service sector is high in 'Public Administration, Defence, Personal Services, etc.'

compared to their male counter parts. The share of urban female in 'Public Administration, Defence, Personal Services, etc.' is increasing at 6.42 per cent. The increase in female work participation rate is encouraged but the increase of employment growth rate in 'Public Administration, Defence, Personal Services, etc.' raises questions regarding the quality of the work.

The '*jobless growth*' in India and the employment lag of service sector has been well analysed⁷. However, there was a revival in employment growth⁸ in the latter half of the reform period. The revival in employment growth rate is visible in both Rural-Urban area and among the males and females. But the decline in the sectoral contribution to total employment growth rate put doubt on the reviving employment situation in service sector. Employment opportunities are mainly generating in the sub-sector 'Other Services' which consists of (Finance, Insurance Real Estate, Business Services, Public Administration, Defence Services, Education, Community and Personal Services). Growth of low-end service sector employment, especially, among females raises the question of quality of employment. All these issues need to be discussed in a regional perspective, also. In the next section the region wise growth of output and employment is analysed.

⁷ This '*jobless growth*' trend is well explained by different researchers. The figures gives us an impression that the reforms that we have initiated in our economy is not giving a good result rather it is putting doubt on the issues of output growth and employment. This is more in the case of service sector. Due to the opening up of the economy we expect these sectors to show good performance and will utilize the abundant skilled, low cost labour that we have.

Most of the studies support the jobless growth trend of 90s. In this regard as we can see Banga (2005) gives threefold explanation for this phenomenon. First explanation we proved in our analysis, that is, potential employment generating sector's showed a slow growth and employment elasticity has come down in all sub sectors. And the other two are; high labour productivity in faster growing sub-sectors and trade liberalisation caused the growth of low employment generating sub-sectors. Bhattacharya and Mitra (1990) say that employment grows faster than income in the unorganised service sector.

⁸ Literature also shows that, the jobless growth need not stay for long period as it happens through growth process, Nayyar (2006).

2.3 Regional Pattern in Service Sector Output and Employment

Socio-Economic progress in India is not uniform in all states. Diversity occurs due to geographical as well as historical reasons. It is worthwhile to study the pattern of output and employment growth of service sector across different regions. This section looks into various dimensions of the region's sectoral composition in output and employment. The sectoral composition of NSDP shows that all regions are dominated by service sector and for employment primary sector continues to dominate as we saw in the case of 'All India'. Concentration of the sector in terms of NSDP and employment as a proportion of 'All India' is also analysed in this section.

2.3.1 Methodology

States are taken as the basic unit for regional analysis. They are Andhra Pradesh, Bihar⁹, Gujarat, Haryana, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh, and West Bengal. Rank correlation is computed to find the change in the ordering of states among sectors across time. Coefficient of Variation (CV) is a relative measure of dispersion. CV is calculated to measure the inter-state disparity in each sector across time. The larger the value of CV, the greater the degree of variability in that variable. Location quotient measure¹⁰ an industry's concentration in a particular industry in time period T. Higher the location quotient, greater is the local specialization in the given industry. Here we use the technique to measure the concentration of each sectors in each states (region) compared to 'All India'. The technique is as follows.

⁹ Bihar in the study includes both Bihar and the newly formed state Jharkhand; Similarly, Madhya Pradesh includes both Madhya Pradesh as well as Chattisgarh and Uttar Pradesh includes both Uttar Pradesh and Uttaranchal.

¹⁰ Economic base theory assumes that all local economic activities can be identified as basic or non-basic. Location quotient is one of the techniques used to determine the level of basic sector employment by comparing the local economy (state) to the economy of a larger geographic unit (nation), in the process attempting to identify specialization in the local economy. It is most commonly used economic base analysis method. Refer Leigh (1970), Alagh et al (1971), Brodsky and Sarfaty (1977), Figueiredo *et al.*, (2007)

Location Quotient (LO), $\frac{b_{ij}}{b_i}$ a_{ij} = Employment (Output) in the i^{th} industry of the j^{th} region.
 $b_{ij} = \frac{a_{ij}}{J_j}$ J_j = Total Employment (output) in the i^{th} region.
 $b_i = \frac{I_i}{T}$ I_i = Total Employment (output) in i^{th} industry in all the regions.

Value of LQ can be equal to unity, greater than or less than unity. If $LQ = 1$, then the particular industry's share of employment in the state is the same as the industry's share nationally. If $LQ > 1$, then the industry is assumed to be basic because those jobs are above what a local economy should have to serve local needs. $LQ < 1$, industry's share of state employment is smaller than its share of national employment. Here the state is under represented in the particular industry.

2.3.2 Regional Patterns in Output

It is observed from Table 2.11 that, during the reference period (1983 to 2004-05), the sectoral contribution to NSDP has been changing in favour of service sector. At the beginning of the reference period itself service sectors of Maharashtra, West Bengal and Tamil Nadu were contributing the major share to its NSDP and the status continues in the subsequent periods. Except Himachal Pradesh in all states share of service sector in NSDP is increasing in all reference periods and the sector is dominating in all states. The performance of Bihar is not in line with this observation. Bihar's primary sector is growing at a rate of 4.79 per cent (2004-05) in NSDP that has increased compared to the previous period. Its service sector is growing at 5.52 per cent (2004-05), which has slightly decreased by 0.20 per cent from the previous period. In almost all states contribution of primary sector to NSDP is coming down in all reference periods¹¹. For Himachal Pradesh and Punjab, share of secondary sector is increasing in all periods. The sector's share in Karnataka and UP have increased in the periods between 1999-00 to 2004-05 and all other states shows a fall in the share during the same period.

¹¹ Fall in the contribution of the sector is analysed and have come out with lots of reasons. Some of them are fall in the productivity, power, irrigation facility and so on. With respect to Punjab and Haryana which are two of the major agrarian state, one of the major problems faced by them are fall in the water table.

Table 2.11: NSDP Share of Major Sectors in Different States.

	1983			1987-88			1993-94			1999-00			2004-05		
	Primary	Secondary	Service	Primary	Secondary	Service	Primary	Secondary	Service	Primary	Secondary	Service	Primary	Secondary	Service
Andhra Pradesh	51.1	14.9	33.9	41.7	16.7	41.7	38.0	18.8	43.2	31.6	20.3	48.0	28.3	20.1	51.6
Bihar	56.7	17.9	25.3	52.2	20.7	27.1	47.7	16.5	35.7	41.5	20.1	38.5	41.3	19.2	39.6
Gujarat	48.6	23.5	27.9	54.0	19.8	26.2	26.9	33.3	39.8	19.8	35.4	44.7	20.1	34.7	45.3
Haryana	52.3	18.3	29.4	42.0	24.2	33.8	42.8	25.4	31.8	34.5	25.9	39.6	28.1	25.0	47.0
Himachal Pradesh	49.7	17.8	32.5	40.7	20.8	38.4	36.0	25.3	38.7	23.9	32.0	44.1	24.0	34.9	41.1
Karnataka	46.6	20.1	33.3	41.6	20.6	37.8	38.1	24.0	37.9	31.5	23.4	45.0	20.3	25.0	54.7
Kerala	39.5	24.2	36.4	37.7	22.3	39.9	32.2	20.3	47.5	26.0	19.4	54.6	16.6	18.7	64.7
Madhya Pradesh	54.4	18.9	26.7	47.6	20.3	32.1	44.7	20.9	34.4	36.9	25.6	37.4	34.2	24.0	41.9
Maharashtra	28.1	32.0	39.9	25.8	33.1	41.2	21.2	31.2	47.6	17.8	29.3	52.9	12.8	25.8	61.4
Orissa	55.4	15.9	28.8	49.0	17.7	33.3	48.6	16.1	35.3	39.9	17.7	42.3	38.6	15.1	46.3
Punjab	47.7	16.3	36.0	47.2	17.3	35.5	48.2	19.8	31.9	42.4	20.9	36.7	38.7	21.5	39.9
Rajasthan	57.0	15.6	27.4	40.4	20.6	39.0	37.1	23.4	39.5	31.2	27.9	40.9	29.4	25.7	44.9
Tamil Nadu	25.6	32.8	41.6	24.8	28.8	46.3	37.1	23.4	39.5	31.2	27.9	40.9	29.4	25.7	44.9
Uttar Pradesh	49.8	17.7	32.5	45.0	20.2	34.8	41.7	19.4	38.9	40.0	19.1	40.9	35.3	20.1	44.6
West Bengal	34.9	23.8	41.3	37.4	21.5	41.1	35.9	21.3	42.8	29.7	21.3	49.0	24.2	18.7	57.2
All India	37.9	22.7	39.4	33.05	23.52	43.42	31.49	23.31	45.20	26.40	23.61	49.99	21.6	24.5	53.9
CV	0.21	0.27	0.16	0.20	0.20	0.15	0.20	0.21	0.12	0.24	0.22	0.12	0.30	0.24	0.16

Source: Estimated using data from NAS

In order to analyse the change in position of states with regard to the major sector's contribution to their NSDP across different periods, rank correlation of NSDP shares are calculated (*refer* Table 2.12). One important aspect that we can observe from the table is that, the period between 1987-88 and 1993-94 had experienced a major change in the ordering of the states with regard to their share in employment in all the sectors. For primary, secondary and service sector the rank correlation coefficient between 1987-88 and 1993-94 were 0.59, 0.50 and 0.63 respectively. After 1993-94, rank correlation coefficient of these sectors show significant and high rank correlation, suggesting consistency in the ordering of states after 1993-94. The rank correlation coefficient of primary sector between 1993-94 and 1999-00 is 0.97 and between 1999-00 and 2004-05 it is 0.90. For Service sector, the ranks for NSDP are almost same in all periods as given by the significant, positive, strong correlation coefficient. The sector has a rank of 0.63 between the years 1983 and 1987-88, rank correlation coefficient of all other years are around 0.80.

It is worthwhile to note that this reordering of the states had occurred during the period when large-scale economic reforms were initiated in the country. The changes in the ranking of the states' share suggest that economic reforms have significantly altered the relative contribution of the sectors to each state. It is well known the reforms have affected the states differently. The liberalization of the economy that include trade and investment liberalization, directed many states to engage in providing incentives to attract investment. Similarly, export especially service export and more so information technology exports have clear regional concentrations in the southern states of the economy. On the other hand, some of the states that heavily depended on public investment had to suffer as many of these firms were shut down or privatized and relocated. The new industrial policy that had removed the licensing requirements needed no location specific criteria to be fulfilled; hence the regional industrial balance had shifted during this period.

Table 2.12: Rank Correlation Coefficient of Primary, Secondary and Service Sector NSDP.

	1983	1987-88	1993-94	1999-00	2004-05
Primary					
1983	1				
1987-88	0.6321*	1			
1993-94	0.5898*	0.5934*	1		
1999-00	0.5219*	0.5612*	0.9463*	1	
2004-05	0.5755*	0.5004	0.8605*	0.8962*	1
Secondary					
1983	1				
1987-88	0.7364*	1			
1993-94	0.5201*	0.5072	1		
1999-00	0.3592	0.3766	0.8962*	1	
2004-05	0.2115	0.2673	0.8323*	0.9292*	1
Services					
1983	1				
1987-88	0.8132*	1			
1993-94	0.5063	0.6309*	1		
1999-00	0.5220*	0.5269*	0.8323*	1	
2004-05	0.5259*	0.4808	0.6100*	0.8395*	1

Source: Estimated using data from NAS.

**Coefficient significant at five per cent level.*

NSDP growth rates of service sector and sub-sectors are given in Table 2 in Appendix. The table shows that there is very high variability in the growth rate of certain states in the whole reference period. Tamil Nadu and Gujarat are good examples. Tamil Nadu's service sector which was one of the fastest growing service sectors in the first period went down to the lowest growth rate during the second period. Same time the service sector of Gujarat, which showed the slowest growth during the initial period, became the fastest growing in the next period. Within the service sector 'Transport, storage, communication etc' is the fastest growing sub-sector and in all states there follow the same trend. Here also there are wide fluctuations in growth rate. In 2004-05, 'Other services' is dominating in the service sector share of NSDP, excluding the case of Haryana. 'Trade, commerce, restaurant etc' showed a declining trend all through the period. The experience of Himachal Pradesh is contrary to this general trend.

Coefficient of Variation will show the variability in terms of share in NSDP in each period. From Table 2.11 we can see that, service sector have comparatively minimum

disparity compared to other sectors in all period, and CV was coming down till 1999-00, which later increased marginally. From 1983 to 1993-94 CV was coming down from 0.16 to 0.12, 1999-00 states are keeping same CV as in 1993-94. But by 2004-05 it increased to 0.16. Thus during 1999-00, the states were keeping almost same rank (as given by the rank correlation coefficient in Table 2.12) and also the disparity among the states were coming down. During the period between 1999-00 and 2004-05, because the share of sector in NSDP in some states increased at a higher rate compared to other states, the CV have increased slightly with states keeping same ranks.

Taking into consideration, that CV has not changed much for the service sector share, it can be said that almost all the states have more or less equal share in service sector through out the period 1983 to 2004-05. The rise in the service sector share that was seen at the national level also had occurred more or less uniformly in most states. The rank changes that we noticed above have not caused much variability in the services share across states. Even when the ranks have changed the services share have not changed much in most states.

While 'Trade, Commerce, Restaurant, etc.' and 'Public Administration, Defence, Personal Services, etc.' were the leading and equally contributing sectors in 1983, for 'States' (Table 3 and Table 3(A) in Appendix), 'Trade, Commerce, Restaurant, etc.' is the major contributor apart from Bihar, Himachal Pradesh and Maharashtra, which were earning mainly from 'Public Administration, Defence, Personal Services, etc.'. By 2004-05, there is a total shift in the sectoral prominence in NSDP. States like Andhra Pradesh, Bihar, Himachal Pradesh, Madhya Pradesh, Orissa, Tamil Nadu, and Uttar Pradesh are earning major part of their NSDP from 'Public Administration, Defence, Personal Services, etc.' And, states like Maharashtra and West Bengal are earning from 'Financial Intermediary, Real Estate, etc.'. All other states continue to earn their major part from 'Trade, Commerce, Restaurant, etc.'. The coefficient of variations given in the table shows that the disparities among the states are increasing in all sub-sectors of service sector as given by the increasing coefficient of variation.

Spearman's rank correlation method is used to find the changes in the ordering of states with regard to their ranks in sub-sectors during different periods. Rank correlation

coefficients are given in Table 2.13. Results shows that, for sub-sectors of the service sector 'Transport, Storage, Communication, etc.:', 'Other Services' and 'Public Administration, Defence, Personal Services, etc.', the correlation coefficient is significant, positive and strong in all periods, except for the period 1987-88 to 1993-94. This implies that states had experienced change in ranking during the period 1987-88 to 1993-94.

Table 2.13: Coefficient of Rank Correlations: NSDP Shares in the States.

	1983	1987-88	1993-94	1999-00	2004-05
Trade, Commerce, Restaurant, etc.					
1983	1				
1987-88	0.8893*	1			
1993-94	0.6559*	0.5702*	1		
1999-00	0.4665	0.4450	0.9463*	1	
2004-05	0.4665	0.5416*	0.8175*	0.8676*	1
	1983	1987-88	1993-94	1999-00	2004-05
Transport, Storage, Communication, etc.					
1983	1				
1987-88	0.9179*	1			
1993-94	0.1948	0.2002	1		
1999-00	0.2449	0.3217	0.7424*	1	
2004-05	0.0840	0.2431	0.6279*	0.9249*	1
	1983	1987-88	1993-94	1999-00	2004-05
Other Services					
1983	1				
1987-88	0.9536*	1			
1993-94	0.4951	0.4236	1		
1999-00	0.5845*	0.5666*	0.8927*	1	
2004-05	0.5022	0.5130	0.5564*	0.7245*	1
	1983	1987-88	1993-94	1999-00	2004-05
Financial Intermediary, Real Estate, etc.					
1983	1				
1987-88	0.9500*	1			
1993-94	0.5165*	0.6273*	1		
1999-00	0.3307	0.3950	0.7388*	1	
2004-05	0.5094	0.6631*	0.8605*	0.8354*	1
	1983	1987-88	1993-94	1999-00	2004-05
Public Administration, Defence, Personal Services, etc.					
1983	1				
1987-88	0.9643*	1			
1993-94	0.5290*	0.5058	1		
1999-00	0.5541*	0.5916*	0.8962*	1	
2004-05	0.3074	0.4200	0.6816*	0.8569*	1

Source: Estimated using data from NAS

* Coefficient significant at five per cent level.

For trade, commerce and restaurant sector; the rank correlation was 0.57. For transport, storage and communication it was 0.20, for other services it was 0.42 of which financial intermediary had 0.62 and the community and personal service had 0.50. The periods before and after this 1987-88 show high correlation across all sub-sectors, reiterating the issue that was raised earlier; namely, reordering of ranks after liberalization, especially in the service sector.

The Location Quotient of Service Sector Output

During 1983, Primary sector was the major contributor to NSDP (From Table 2.11) in almost all states. Not only had these states earned major part of their NSDP from the particular sector, most of them were specialized in the sector as given by the value of location quotient greater than unity¹² (Table 4 in Appendix). By 2004-05 there have been changes in the sectoral share as well as the sector in which each state are specialized. During 2004-05 states, Andhra Pradesh, Bihar, Haryana, Madhya Pradesh, Orissa, Punjab, Rajasthan, Tamil Nadu and Uttar Pradesh are concentrating in Primary sector (value of location quotient is greater than unity). Himachal Pradesh, Gujarat and Karnataka show a shift in the specialised as we can see that the value of location quotient which was greater than unity in 1983, which is less than unity by 2004-05. Whereas, Tamil Nadu have improved its specialization and is concentrating in primary sector during 2004-05 given by the location quotient value greater than unity compared to its lesser value in 1983.

States such as Gujarat, Haryana, Himachal Pradesh, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Tamil Nadu are concentrating in secondary sector by 2004-05. Compared to situation in 1983, Haryana, Himachal Pradesh, Karnataka, Madhya Pradesh and Rajasthan are specialised in secondary sector during 2004-05. Gujarat, Maharashtra, and Tamil Nadu still continue to be specialised in the sector compared to 1983. Location quotient value for Kerala and West Bengal is below unity by 2004-05, which shows the shift in states specialization.

¹² Andhra Pradesh, Bihar, Gujarat, Haryana, Himachal Pradesh, Karnataka, Madhya Pradesh, Orissa, Punjab, Rajasthan, Uttar Pradesh, were specialized (concentrating) in the sector as shown by the value of location quotient to be greater than unity.

Service sector is the major contributor in NSDP for all states except Bihar. States are grouped according to their concentration in the sector as given by the value of location quotient in Table 2.14. While the sector is dominating in contributing to the sectoral share in NSDP, very few states are specialised in the sector. West Bengal, Kerala, Maharashtra, Karnataka and Andhra Pradesh are showing concentration of the sector in NSDP during the period 2004-05. Of these states apart from Karnataka, which shows a fall in the location quotient value from unity during 1983 and 1993-94, all continues to concentrate in the sector's output generation in the whole reference period (1983 to 2004-05). Tamil Nadu and Punjab were concentrating in the sector during 1983 but later on their location quotient value have come below one. Though some states are specialized in output generation in service sector, they are not following same pattern with respect to employment creation.

Table 2.14: States Classified According to Location Quotient of Service Sector NSDP

Year	Location Quotient of NSDP <1	Location Quotient of NSDP >1
1983	Himachal Pradesh, Karnataka, Madhya Pradesh, Orissa, Rajasthan, Bihar, Uttar Pradesh, Haryana, Gujarat	West Bengal, Kerala, Maharashtra, Andhra Pradesh Tamil Nadu, Punjab
1987-88	Madhya Pradesh, Orissa, Bihar, Uttar Pradesh, Haryana, Gujarat, Punjab	West Bengal, Kerala, Maharashtra, Tamil Nadu, Himachal Pradesh, Karnataka, Rajasthan, Andhra Pradesh
1993-94	Himachal Pradesh, Karnataka, Madhya Pradesh, Orissa, Rajasthan, Bihar, Uttar Pradesh, Haryana, Gujarat, Tamil Nadu, Punjab	West Bengal, Kerala, Maharashtra, Andhra Pradesh
1999-00	Himachal Pradesh, Madhya Pradesh, Orissa, Rajasthan, Bihar, Uttar Pradesh, Haryana, Gujarat, Tamil Nadu, Punjab	West Bengal, Kerala, Maharashtra, Karnataka, Andhra Pradesh
2004-05	Himachal Pradesh, Madhya Pradesh, Orissa, Rajasthan, Bihar, Uttar Pradesh, Gujarat, Haryana, Tamil Nadu, Punjab	West Bengal, Kerala, Maharashtra, Karnataka, Andhra Pradesh,

Source: Classification did on the basis of Location Quotient estimated using data from NAS.

2.3.3 Regional Patterns in Employment

Though employment share in primary sector have come down in all states, it still continues to dominate in providing employment except Kerala and Punjab in 2004-05

(Table 2.15). Apart from Gujarat and Haryana, which showed a slight fall in the share of service sector employment all other states share have increased. The employment share of secondary sector experienced slight fall for the states of Kerala, West Bengal and Karnataka but the sector's share has increased for the rest. Kerala and Punjab are surging ahead in service sector with shares of 40.5 per cent and 37.7 per cent respectively as per the 61st round. Service sectors in West Bengal, Haryana and Tamil Nadu has been slowly emerging as the leading employment provider while Madhya Pradesh and Bihar are lagging behind in this regard. The falling share in Gujarat and Haryana during the last period is contrary to the general trend.

The rank correlation coefficients are calculated to find the changes in the ordering of states in major sectors across different periods. The correlation coefficients of major three sectors are given in Table 2.16. While the correlation coefficient of output shares (as explained earlier in Table 2.12) showed a break in trend in correlation during the liberalization period, the correlation coefficient of employment for the major sectors shows significant, positive, strong correlation among all the sectors in all periods. States are following almost same ordering in employment share in all periods. Correlation coefficient of service sector is around 0.93 in all years implying the states follow similar ranks in all the periods.

In order to analyse the variations in the shares in the five points of time under consideration, coefficient of variations are calculated. As observed from Table 2.15, in general the CV for service and secondary sector are higher than that of the primary sector. However, for service sector and secondary sector, there is reduction in the inter-state disparity of sectoral shares among all states while that of primary sector is increasing continuously. For service sector the disparity increased during 1993-94 compared to all other periods, but later on the CV have come down and is 0.26 during 2004-05. While the service and secondary sector employment pattern seem to be getting uniform across regions primary sector employment growth seem to be increasingly concentrated regionally.

Table 2.15: Employment Share of Major Sectors in India and States.

	Primary	Secondary	Service	Primary	Secondary	Service	Primary	Secondary	Service	Primary	Secondary	Service	Primary	Secondary	Service
	1983			1987-88			1993-94			1999-00			2004-05		
Andhra Pradesh	67.6	12.5	19.8	66.0	14.0	20.0	67.5	12.5	20.0	66.0	12.5	21.6	59.4	15.6	25.1
Bihar	71.2	10.9	17.9	74.0	9.8	16.3	76.4	7.3	16.3	73.1	10.3	16.7	67.5	13.1	19.4
Gujarat	64.0	16.4	19.6	50.3	26.6	23.2	55.2	21.9	23.0	57.1	17.8	25.1	52.6	22.5	24.9
Haryana	56.4	15.4	28.2	53.7	18.7	27.7	46.9	18.5	34.6	44.3	21.6	34.2	40.5	26.4	33.1
Himachal Pradesh	82.8	6.6	10.6	76.3	12.1	11.6	70.9	13.4	15.8	60.9	18.9	20.2	59.3	20.5	20.3
Karnataka	68.3	14.4	17.2	66.7	15.1	18.3	64.7	14.5	20.8	62.8	14.5	22.7	61.2	14.5	24.4
Kerala	50.0	21.3	28.6	45.7	21.5	32.8	44.9	22.4	32.7	34.5	26.9	38.6	32.9	26.7	40.5
Madhya Pradesh	80.3	8.6	11.1	75.9	10.4	13.7	77.6	7.9	14.5	74.0	9.7	16.3	69.2	12.3	18.5
Maharashtra	63.9	16.3	19.8	61.1	16.3	22.6	58.6	15.7	25.7	55.9	16.0	28.1	53.1	17.8	29.1
Orissa	72.6	13.0	14.4	69.0	13.4	17.6	73.3	10.3	16.4	70.7	13.3	16.0	61.0	18.2	20.8
Punjab	55.0	17.7	27.3	51.9	19.6	28.5	48.3	18.4	33.3	42.7	21.9	35.3	34.6	27.8	37.7
Rajasthan	73.5	13.9	12.5	64.7	20.6	14.8	66.9	15.7	17.4	64.2	17.5	18.3	58.6	20.8	20.7
Tamil Nadu	56.2	20.9	22.8	52.6	23.4	24.0	51.6	22.8	25.6	46.6	24.8	28.7	41.3	27.8	30.9
Uttar Pradesh	68.2	12.8	18.9	69.7	12.0	18.3	66.7	12.6	20.7	60.6	16.2	23.1	56.1	19.9	23.9
West Bengal	52.5	19.5	28.0	51.6	20.7	27.7	46.0	23.3	30.7	47.2	21.6	31.2	45.5	21.3	33.2
CV	0.15	0.29	0.31	0.17	0.30	0.29	0.19	0.34	0.30	0.21	0.29	0.29	0.22	0.26	0.26
All-India	66.7	14.2	19.1	63.3	16.0	20.8	62.5	14.9	22.6	59.2	16.1	24.7	54.8	18.8	26.4

Source: Estimated using data from NSSO.

Table 2.16: Rank Correlation Coefficient of Primary, Secondary and Service Sector Employment.

	1983	1987-88	1993-94	1999-00	2004-05
Primary					
1983	1				
1987-88	0.8750*	1			
1993-94	0.9107*	0.8893*	1		
1999-00	0.8536*	0.7857*	0.9429*	1	
2004-05	0.8464*	0.8357*	0.9179*	0.9679*	1
Secondary					
1983	1				
1987-88	0.8786*	1			
1993-94	0.8919*	0.9205*	1		
1999-00	0.7650*	0.7560*	0.8766*	1	
2004-05	0.7542*	0.7900*	0.8301*	0.9499*	1
Services					
1983	1				
1987-88	0.9633*	1			
1993-94	0.9097*	0.9445*	1		
1999-00	0.8937*	0.9231*	0.9429*	1	
2004-05	0.9348*	0.9696*	0.9429*	0.9321*	1

Source: Estimated using NSSO data.

**Coefficient significant at five per cent level.*

Performance of service sub-sectors in employment share is following almost similar pattern of 'All India'. Refer Table 6(A) and Table 6(B) in Appendix Till 1993-94 similar to 'All India' result, the sub-sector 'Public Administration, Defence, Personal Services, etc.' was providing employment to major part of work force in service sector. The sector's share is coming down during whole reference period (except for Kerala and Punjab). From 1999-00 onwards as we see in 'All India' case, all states except Himachal Pradesh, have major part of work force in the sub-sector 'Trade, Commerce, Restaurant, etc.'. Himachal Pradesh still continues to provide occupation for majority in 'Public Administration, Defence, Personal Services, etc.' All states experience a rise in the share of employment as in the case of 'All India' in 'Financial Intermediary, Real Estate, etc.' and except Rajasthan, Tamil Nadu and West Bengal employment share in 'Transport, Storage, Communication, etc.' is also increasing. Though share of employment in the sector 'Financial Intermediary, Real Estate, etc.' have increased in all states during 2004-05, the sector accommodate very few workers. Specifically, in all states except Maharashtra and Tamil Nadu (which employs 10.4 per cent and 10.7 per cent respectively), less than 10 per cent of total workers in service sector are

accommodated in the sector when the sector contributes very high share of NSDP in all states.

A decline in employment growth was a common feature for majority states during the period between 1993-94 and 1999-00. The fall in the employment growth rate in 'Trade, Commerce, Restaurant, etc.' in 'All India' is reflected in all states except Andhra Pradesh, Bihar, Himachal Pradesh, and Orissa. Similarly, the fall in employment growth in 'All India' in 'Transport, Storage, Communication, etc.' is reflected in the states except Andhra Pradesh, Bihar, Haryana, Orissa and Uttar Pradesh. With regard to 'Other services', Bihar and Himachal Pradesh experience a fall in the employment growth rate in the last period and all other states are following the same path as 'All India'. Gujarat, Himachal Pradesh and Kerala show a fall in the employment growth in the last period in 'Financial Intermediary, Real Estate, etc.'. Apart from Bihar, all other states are experiencing a rise in the employment growth during the last period. Employment growth (Table 7 in Appendix) in service sector varies between states. In the whole reference period (1983 to 2004-05) there are inconsistencies and instabilities in employment growth rate between major sectors and within the service sub-sectors. For example Gujarat, whose 'Trade, Commerce, Restaurant, etc.' growth rate was 16.44 per cent during the first period decreased to 2.85 per cent growth rate during the last period. Growth rate in employment across states had declined or stagnated during the period 1993-94 to 1999-00¹³. This trend did not follow in the subsequent period.

Rank correlation coefficients are calculated to find the change in the ordering of states. It is evident from Table 2.17 that, though the states are following almost similar pattern of 'All India' results regarding the broad sectoral composition, it is showing differences in its own ranks and variations in different periods. Result shows that there is no significant correlation between the shares from 1987-88 onwards for 'Trade, Commerce, Restaurant, etc.' which had weak positive correlation between 1983 and 1993-94 shares. The variations between states regarding the share have come down over the period. The sub-sector 'Transport, Storage, Communication, etc.' shows significant positive and strong relation between 1983 and 1987-88 ranks later in the

¹³ Similar results are there in Sharma and Abraham (2005)

last period it shows weak relation. The variations among the states are coming down continuously over the periods.

Table 2.17: Coefficient of Rank Correlation of Employment Shares in States.

	1983	1987-88	1993-94	1999-00	2004-05
Trade, Commerce, Restaurant, etc.					
1983	1				
1987-88	0.5464*	1			
1993-94	0.6202*	0.3610	1		
1999-00	0.0465	0.4794	0.3151	1	
2004-05	0.0607	0.2964	0.4325	0.4347	1
Transport, Storage, Communication, etc.					
1983	1				
1987-88	0.8605*	1			
1993-94	0.3524	0.3980	1		
1999-00	0.7030*	0.7388*	0.5930*	1	
2004-05	0.2229	0.3653	0.3554	0.6840*	1
Other Services					
1983	1				
1987-88	0.7129*	1			
1993-94	0.5970*	0.5040	1		
1999-00	0.1556	0.3569	0.4129	1	
2004-05	0.2343	0.4419	0.5362*	0.3739	1
Financial Intermediary, Real Estate, etc.					
1993-94	-	-	1		
1999-00	-	-	0.9248*	1	
2004-05	-	-	0.7952*	0.7941*	1
Public Administration, Defence, Personal Services, etc.					
1993-94	-	-	1		
1999-00	-	-	0.5273*	1	
2004-05	-	-	0.5964*	0.4647	1

Source: estimated using NSSO data

* Coefficient significant at five per cent level.

With regard to 'Other Services' though there was strong positive significant correlation between 1983 and 1987-88, its relation with next period rank is weak and later on not even significant. Again there is weak positive significant correlation between the ranks in 1993-94 and 2004-05. Coefficient of variation shows a continuous fall till 1993-94, but in 1999-00 variation is increasing. Later it comes down to same position. Coming to the sub-sectors in 'Other Services'; 'Financial Intermediary, Real Estate, etc.' shows an increase in the inter-state disparity in the last period and also shows a significant, positive and strong relation in the ordering in all years. For 'Public Administration, Defence, Personal Services, etc.' there is significant but weak correlation among the ranks in the initial period of post-reform period but later there

is no significance relation. Where as the inter-state disparity with regard to the share of this sector though increased in 1999-00, which came down in the last period.

Location quotient results are given in Table 8 (see Appendix) shows the concentration of employment in each state (or the sector in which each state is specialized in generating employment) for major sectors from 1983 to 2004-05. Andhra Pradesh, Bihar, Himachal Pradesh, Karnataka, Madhya Pradesh, Orissa, Rajasthan, and Uttar Pradesh seems to be specialised in providing employment in primary sector all the periods between 1983 to 2004-05 (for these states value of location quotient of employment is greater than one in all periods). One remarkable thing that we can find there is Punjab and Haryana which are highly agrarian states seems to be specialised only in output production of the sector and not in employment generation. Both these states on the other side are concentrating employment generation in secondary as well as service sector. Himachal Pradesh, Uttar Pradesh and Rajasthan show an improvement in the concentrating employment generation in secondary sector over the period between 1983 to 2004-05 and by 2004-05 they are specialized in employment generation in the sector (given by value of location quotient greater than one).

Andhra Pradesh and Gujarat, which were specialised in employment generation in service sector earlier shows a fall in the value of location quotient less than one, implying a movement in specialization towards some other sector. Haryana, Kerala, Maharashtra, Punjab, Tamil Nadu, West Bengal are specialised in generating employment in service sector in all period (from 1983 to 2004-05). Based on the location values in Table 2.18 states are grouped into two: first, states with location quotient less than one; and second, states with location quotient greater than one. West Bengal, Kerala, Maharashtra, Haryana, Tamil Nadu and Punjab shows concentration of the sector in employment during all periods (1983 to 2004-05). Gujarat was concentrating in employment generation in the sector till 1999-00, but during 2004-05 value of location quotient fell to 0.97. All other states shows less than proportionate share in sectors contribution to employment compared to all India.

Table 2.18: States Classified According to Location Quotient of Employment in Service Sector.

	Location Quotient Employment <1	Location Quotient Employment >1
1983	Himachal Pradesh, Karnataka, Madhya Pradesh, Orissa, Rajasthan, Bihar, Uttar Pradesh	West Bengal, Kerala, Maharashtra, Andhra Pradesh, Tamil Nadu, Punjab, Haryana, Gujarat
1987-88	Madhya Pradesh, Orissa, Bihar, Uttar Pradesh, Himachal Pradesh, Karnataka, Rajasthan, Andhra Pradesh	West Bengal, Kerala, Maharashtra, Tamil Nadu, Haryana, Gujarat, Punjab
1993-94	Himachal Pradesh, Karnataka, Madhya Pradesh, Orissa, Rajasthan, Bihar, Uttar Pradesh, Andhra Pradesh	West Bengal, Kerala, Maharashtra, Haryana, Gujarat, Tamil Nadu, Punjab
1999-00	Himachal Pradesh, Madhya Pradesh, Orissa, Rajasthan, Bihar, Uttar Pradesh, Karnataka, Andhra Pradesh	West Bengal, Kerala, Maharashtra, Haryana, Gujarat, Tamil Nadu, Punjab
2004-05	Himachal Pradesh, Madhya Pradesh, Orissa, Rajasthan, Bihar, Uttar Pradesh, Gujarat, Karnataka, Andhra Pradesh	West Bengal, Kerala, Maharashtra, Haryana, Tamil Nadu, Punjab

Source: Classification did on the Basis of Location Quotient estimated using data from NSSO.

2.3.4 Employment and Output Comparison: The Regional Patterns

The economic disparities that exist among states are results of wide range of factors. Along with the specific feature of the state, macroeconomic policies of the government also contribute to the disparity. Poorer states are caught in a vicious circle with very low-income generation and high dependence on agricultural sector for livelihood. Service sector though contribute majority of NSDP, its contribution to employment is very low in almost all states. A comparison of output and employment creation in the sector will give up clearer picture.

Relative Shares

While service sector is the principal contributor of NSDP in all states (except Bihar, which have a share of 39.6 per cent of total NSDP), the sector is the second largest contributor in employing work force in all states (except Himachal Pradesh and Rajasthan, which employs equal share of workers in both secondary as well as service sector). We already tested the same trend in 'All India' situation in first section of this chapter. The sector's share is increasing in NSDP as well as employment in all periods from 1983 to 2004-05 in almost all states. The fall in GDP growth

experienced during period between 1999-00 to 2004-05 is applicable to some states also, of which Himachal Pradesh experienced a steep fall in the growth rate from 10.0 per cent to 4.3 per cent (*see* Table 2 in Appendix). Employment growth rate is increasing for all states except Gujarat and Kerala (Table 5 in Appendix). Service sub-sectors are not in line with 'All India' results, which shows that 'Trade, Commerce, Restaurant, etc.' to contribute major part of GDP during 2004-05. Different states shows different sector to provide major part of their NSDP. 'Trade, Commerce, Restaurant, etc.' accommodates major part of workers in all states except for one state, namely, Himachal Pradesh. Growth rates of NSDP and employment can be better explained with the help of employment elasticity.

Employment Elasticity

With employment elasticity an attempt is done to analyse whether growing service sector is able to generate the expected level of employment. The lag in employment generation is clearly visible in most of the states during the period between 1993-94 and 1999-00. Employment elasticity (*refer* Table 9 and Table 10 in Appendix) for service sector remained at the level of less than one for most of the states during the reference period. Similar to the All India trend the intensity of such a lag seems to be coming down during the last period. Similar to the 'All India' trends, the intensity of such a lag seems to be coming down in states during the last period.

Though there is lag in employment generation, almost all states registered an upward trend in employment elasticity in the period between 1999-00 to 2004-05. From 'All India' analysis it is clear that the upward movement of elasticity in service sector is attributed to improvement in 'Other Services' which showed increase in elasticity when other two sub-sector's elasticity came down in the same period. Sub-sector wise analysis of employment elasticity can give a clear picture on the output-employment relation in service sector in the states. States can be grouped into three groups according to the employment elasticity. These are; namely, high employment elasticity (elasticity greater than one); medium employment elasticity (elasticity between 0.5 and one) and low employment elasticity (elasticity less than 0.5). From Table 10 in appendix, it is clear that for 'All India', 'Financial Intermediary, Real Estate, etc.' only shows high employment elasticity. The sectors 'Trade, Commerce, Restaurant, etc.' and 'Other Services' shows medium level of employment elasticity and 'Transport, Storage, Communication, etc.' and 'Public Administration, Defence,

Personal Services, etc.' are having low employment elasticity¹⁴. The disaggregate level analysis of the sector 'Other Services' will give clear picture about better performance of service sector during period between 1999-00 and 2004-05.

The sector 'Financial Intermediary, Real Estate, etc.' which is one of the sub-sectors of 'Other Services' shows that, states except Himachal Pradesh and Karnataka experienced a fall in the employment elasticity in the latter half of post-reform period (1999-00 to 2004-05), in contrast to the increase in the same in 'All India' and other states. Most of the states experience high employment elasticity (elasticity greater than one). These are Karnataka¹⁵ (0.61), West Bengal (0.80) and Gujarat (0.91) have medium employment elasticity, and Himachal Pradesh (0.04) is having low employment elasticity.

Second sub-sector of 'Other Services'; 'Public Administration, Defence, Personal Services, etc.' (which provides low quality, low paid job, etc.) experienced an increase in employment elasticity in 'All India' as well as for all states during second half of post-reform period (1999-00 to 2004-05) as compared to the beginning of post-reform period (1993-94 to 1999-00). Despite increase in the employment elasticity in the sector, few states (Haryana, Madhya Pradesh Orissa and Punjab) experience high employment elasticity (elasticity greater than one) in the sector during period 1999-00 to 2004-05.

Thus, the credit of improvement in employment elasticity during period between 1999-00 and 2004-05 can be given to both sub-sectors of 'Other Services'. A look into the growth rates of 'All India' (both NSDP and employment) shows that it is due to the increase in the employment growth rate the value of employment elasticity increased. Similarly for almost all state, the employment growth rate of 'Other Services' is increasing and NSDP growth rates are coming down. But since the sector,

¹⁴ 'Trade, Commerce, Restaurant, etc.' occupies major share of GDP but the sector is not able to provide employment in the rate at which it is growing in terms of output production. And 'Other Services' on the other hand provides employment to majority but the elasticity is less than one, which implies that though the sector have large share of workers, the rate at which employment is generated is not in accordance with output generation. This could be better analysed at disaggregating the sector into 'Financial Intermediary, Real Estate, etc.' and 'Public Administration, Defence, Personal Services, etc.'

¹⁵ Karnataka is one of the fastest growing states in Information Technology (IT) and IT enabled services. The state is experiencing less than one employment elasticity in 'Financial Intermediary, Real Estate, etc.' As we know that the IT enabled services comes under this sub-sector, Karnataka fails to provide employment at the same level output is being generated during 1999-00 to 2004-05. It is also observed that the sectors employment elasticity have come down in the period compared to its elasticity in the beginning of post-reform period.

which comprises of 'Financial Intermediary, Real Estate, etc.' and 'Public Administration, Defence, Personal Services etc', is heterogeneous in nature, a general conclusion on why improvement in employment elasticity have occurred is not able to give.

Location Quotient Concentration

The performance of major sectors shows that as we saw in the case of 'All India', most of the states are earning their major part of NSDP from service sector where as only few states corroborate the same status in generating employment in the sector. In this context it would be interesting to identify the state that exactly corresponds with the 'All India' trend. Using location quotient method, concentration of particular sector in output and employment generation in each state is analysed here. The results are given in Table 2. 19.

Table 2. 19: Services Sector LQ of NSDP and Employment

	LQ NSDP & LQ Employment <1	LQ NSDP >1 & LQ Employment <1	LQ NSDP <1 & LQ Employment >1	LQ NSDP & LQ Employment >1
1983	Himachal Pradesh, Karnataka, Madhya Pradesh, Orissa, Rajasthan, Bihar, Uttar Pradesh	-	Haryana, Gujarat	West Bengal, Kerala, Maharashtra, Andhra Pradesh, Tamil Nadu, Punjab
1987-88	Madhya Pradesh, Orissa, Bihar, Uttar Pradesh	Himachal Pradesh, Karnataka, Rajasthan, Andhra Pradesh	Haryana, Gujarat, Punjab	West Bengal, Kerala, Maharashtra, Tamil Nadu
1993-94	Himachal Pradesh, Karnataka, Madhya Pradesh, Orissa, Rajasthan, Bihar, Uttar Pradesh	Andhra Pradesh	Haryana, Gujarat, Tamil Nadu, Punjab	West Bengal, Kerala, Maharashtra
1999-00	Himachal Pradesh, Madhya Pradesh, Orissa, Rajasthan, Bihar, Uttar Pradesh	Karnataka, Andhra Pradesh	Haryana, Gujarat, Tamil Nadu, Punjab	West Bengal, Kerala, Maharashtra
2004-05	Himachal Pradesh, Madhya Pradesh, Orissa, Rajasthan, Bihar, Uttar Pradesh, Gujarat,	Karnataka, Andhra Pradesh,	Haryana, Tamil Nadu, Punjab	West Bengal, Kerala, Maharashtra

Source: Classification did on the basis of Location Quotient estimated using data from NAS and NSSO.

West Bengal, Kerala and Maharashtra shows more than proportionate share (concentration) in the sector both in terms of output and employment throughout all periods. BIMARU states shows less than proportionate share in the services sector both in terms of output and employment. Haryana in all periods have more than proportionate share in terms of employment but less than proportionate share in terms of output. Tamil Nadu and Punjab, showed concentration of output and employment in the sector in the initial periods but later both states showed less than proportionate share in the sector in terms of output keeping employment status same. Himachal Pradesh and Rajasthan, though showed concentration in NSDP in 1987-88 compared to 1983, later it came back to the same position showing less than proportionate share in both in output and employment compared to 'All India'. Gujarat, though showed more than proportionate share in employment till 1999-00, and was having LQ in NSDP almost nearer unity, the state falls in the category of less than proportionate share both in output and employment compared to 'All India'. Andhra Pradesh though showed concentration in terms of output and employment in beginning shows less than proportionate share of employment in the sector but still enjoying concentration in terms of output. Karnataka shows concentration in case of NSDP in services sector though in the initial periods it was in the less specialized group. Andhra Pradesh and Karnataka are continuing to show concentration with regard to output. As we know these states are concentrating in the IT enabled services, which is generating more output than employment.

2.5 Summary

Service sector has been emerging as the leading and promising sector of Indian economy. There seems to be a '*jobless growth*' in the sector in the post-reform period (1993-94 to 2004-05). But a disaggregate analysis brings out a revival in employment elasticity, after 1999-00. The chapter also shows the performance of the sector in Urban-Rural segments and in Gender-Wise differences. Along with this, the problem of existence of regional disparities in service sector is also explained. Some states, due to their geographical features or due to the policies initiated, perform well in certain kinds of services. Moreover, regional disparity is evident in terms of differences in output creation and employment generation. The increasing number of entrants in service sector and particularly in the sub-sector 'Other Services' raises the

questions regarding the quality of employment that will be analysed in the subsequent chapter.

This study confirms the hypothesis that first half of the post-reform period was showing '*jobless growth*'. At the same time, study shows that there has been a revival in the employment growth rate, since 1999-00. These output and employment issues are analysed, here, at national as well at regional perspective.

Chapter III

Towards Quantifying the Quality of Work: A Work Quality Index

Introduction

In the previous chapter, the growth of output and employment in Service Sector was analysed in terms of quantity. This chapter takes up the issue of quality of employment in the sector. Given the time constraints the analysis of quality is confined to a single period i.e. 2004-05, using the unit level data of 61st round of NSSO on Employment and Unemployment. The service sector is sub divided into 26 industries at the two-digit level National Industrial Classification (1998) level, which will give a better picture on the distribution of work force as well as different aspects of employment to reflect upon the quality of work.

The analysis of quality of work that is being undertaken assumes importance in the context of growing discussion on globalization with a human face¹. There is growing realization that markets do not function in isolation from their social and political contexts, there are human needs which markets alone cannot satisfy. This context calls for, giving a human face to economic growth. Thus the deliberations in the context of employment, along with creating more employment opportunity, quality of work and life of workers gain prominence.

As a first step before looking into the quality of work, it is important to analyse the different sectors in the economy that are characterized with low working conditions. It is well known that informal² sector, consist of unorganized work and do not have any kind of work security. The sector serves as the main source of employment and source of living for the increasing labour force in the country. Surplus labour in the urban area gets accumulated in the sector (Jacob 2001, Chen *et al.*, 2006). After liberalisation, there has been considerable informalisation taking place especially in the construction industry, wholesale and retail trade, hotel industry, etc. In rural areas, particularly in non-farm sector, informal sector is expanding because of the increase in the number of workers thrown out of the agricultural sector and also due to increasing

¹ The social dimension of globalisation in terms of its impact on employment generation, and its bearing on living conditions of the weaker sections was perhaps raised prominently for the first time by Cornia *et al.*, (1987).

² Informal workers are those who do not have employment security work security and social security.

commercialisation and rise in public work program. The sector is characterized by heterogeneity in work. Employment is mainly located in small and scattered units. Most of the jobs are involving low skills and low wages, lack of unionization³ and sometimes work is not visible. Safety and security norms are not followed at workplace and there is considerable wage discrimination. National Commission for Enterprises in Unorganised Sector (2007) estimated that 92 per cent of total workforce are in informal sector in 2004-05.

Along with the existence of the informal work in the economy, studies⁴ also shows that in India, there is continuous contractualisation taking place, which in one way increases the number of workers in informal sector⁵. Workers used to raise their issues regarding wages, condition of work, other benefits etc through trade union activities. But since most of the works are being contracted out the scope of trade union is becoming less important. Along with this the growing feminization in certain sectors like 'Other Services', as we saw in the previous chapter, raises concern⁶. In order to give some sort of relief from the vulnerable situation which these workers have to face, there are some measures brought out by government as well as non-governmental organisations. Provision of Social Security benefits are one among them.

Studies show that generally there are two kinds of social security benefits they are; *Promotional* (includes financing and provision for education, health, nutrition, employment. etc.) and *Protective* (including compromise, pension and provident funds, maternity benefits, sickness allowance, employee's state insurance, etc). Sakthivel and Joddar (2006), examine the coverage of provident funds as it is the only largely available social security instrument in India for workers. But still except public utilities, coverage of Provident Fund among unorganized is almost nil Agrawal (2002). In India there are no social security policies that cover the entire population. Where as, Nayak (2005) shows a different but relevant way of providing social security. The study shows that providing access to natural resource base, for those who depend on it

³ Trade unions do a representative role in providing voice and identity to labour at the workplace and in society, Jose (2004).

⁴ See Mitra (1998), Choudhary (2003), Dutta (2000) for studies that explain the reasons for the increasing informalisation in the country.

⁵ Along with this some other reasons for increase in the number of workers in informal sector are by some other studies. They are: low employment elasticity in high productive industrial sector, the inability of the organised sector to absorb the migrant labourers from the rural to urban due to the linkages contributed by the developmental strategies.

⁶ Jhabvala and Sinha (2002), Eapen (2004), Anupama, (2008)

for their livelihood like fishing community, nomadic community, salt pan workers, forest gatherers, etc. will be the social security for them. Also, when they lose their right to these resources, workers in piece rate or wage work increases, and for unorganized producers, social security lies in regulated employment, minimum wages, job security, etc. Studies⁷ show that in India there are no social security policies that cover the entire population. Setting up of National Commission for Enterprises in the Unorganised Sector is one of the major steps taken by government in order to ensure welfare of the unorganised sector in India. International Labour Conference in 1999 puts the issue under the concept of 'Decent Work'.

It was the Director General's Report to International Labour Conference in 1999, first time expressed a formal mention about the expression decent work in ILO and in Labour Science. According to International Labour Organisation, a work can be called 'decent work' when it is: productive, deliver fair income, there is security in work place, that provide social protection for families, better proposal for personal development and social integration, freedom for people to express their concerns, organise and participate in the decisions that affect their lives, equality of opportunity and treatment for all women and men. As noted by ILO (1999), security and freedom to express one's opinion will imply the availability of a decent standard of living. This is achieved through income security, which in turn can be achieved through productive employment, saving and accumulated assets (land, housing), through social protection scheme. To ensure Decent Work, would require a multiple approach involving job creation, education, training and retraining.

ILO has proposed the following four strategic objectives to achieve decent work: **Rights at work:** Conditions of labour have to be improved in all sectors (whether it is organised or unorganized, wherever the work is occurring,). **Employment:** obligation to promote the possibilities of work itself. ILO's normative functions carry the following responsibilities: to promote personal capabilities, expand the opportunities for people to find productive work and earn a decent livelihood. The goal is not just the creation of jobs, but the creation of jobs of acceptable quality. All societies have a notion of decent work, but the quality of employment can mean many things. It could relate to different forms of work, and also to different conditions of work, as well as

⁷ Agrawal (2002), Naidu (2003), Nayak (2005), Sakthivel and Joddar (2006) are some of them.

feelings of value and satisfaction. The need today is to devise social and economic systems which ensure basic security and employment while remaining capable of adaptation to rapidly changing circumstances in a highly competitive global market. **Social protection:** protection against vulnerability and contingency. Concerned with the human conditions of work. To see if this arises out of unemployment, loss of livelihood, sickness or old age. **Social Dialogue;** social dialogue requires participation and freedom of association, and is therefore an end in itself in democratic societies. It is also a means of ensuring conflict resolution, social equity and effective policy implementation. It is the means by which rights are defended, employment promoted and work secured. It is a source of stability at all levels, from the enterprise to society at large. To limit our analysis to a meaningful and realistic understanding of the issue, we take the ILO's definition of 'decent work' as the reference point of quality of work.

The existing literature⁸ on quality of work is confined to the quality of work of female workers alone, manufacturing sector, studies on social security benefits of workers, job security etc. Varma and Sasikumar (2004) corroborate that the fastest growing ICT sector in India with high earning, low social security, absence of trade unions etc may increase the vulnerability they have to suffer which need to be given more concern. Studies have not made adequate attempt to analyze the quality of work in service sector. Given the importance of service sector in providing employment as highlighted in the previous chapters, this chapter we attempt to analyse the quality of work in the sector.

The remainder of the chapter is organized as follows. We shall begin with a detailed discussion on analytical and methodological issues involved in the construction of the quality of work index. This is followed by a discussion of the pattern of the selected indicators of quality of work that were used in the construction of the index, the variability of the index across different sub-sectors, and its bearing on certain individual and household characteristics.

3.1 Framework

It is difficult to define the term 'quality' as the term is qualitative and value loaded. Quality of work is defined in different ways. Depending on the indicators one chooses to measure quality, the definitions vary. Aggarwal (2004), NCEUS (2007), Rodger

⁸ Anupama, (2008), Aggarwal (2004), Fallon and Lucas (1991), Kannan (2007).

(ILO) expressed different views on quality of work. Some of the indicators taken to measure quality of work are; level of education of the worker, time period of work, place of work, wages, status of worker, social security benefits, productivity, etc. Most of the literature takes the ILO⁹ definition on 'decent work' while explaining the different quality aspects of the workers. According to ILO's definition "a work can be categorized as Decent Work if there is opportunity of work that is productive, which deliver fair income, there is security in work place, there is social protection for families, better proposal for personal development and social integration, freedom for people to express their concerns, organise and participate in the decisions that affect their lives, equality of opportunity and treatment for all women and men." In order to ensure this ILO's objectives in one can conceive the most important and relevant components of Decent Work are as follows: right to work, rights at work and right to adequate social protection. Based on this definition here we try to incorporate indicators that capture the aspects as mentioned in the ILO definition. The indicators are broadly classified into three: Job Security, Income Security and Conditions of Work, which are explained below.

Job Security: One way of defining job security is based on the period of time a worker is sure about his period of stay in the work, legally or by any other means from the employer. Job security can be provided in the form of contracts or sometimes through legislative laws. Job security for workers in India is usually provided through written contracts, different provisions in the Industrial dispute act of 1947, etc. Apart from the legislative laws and written contracts, some other ways which can indirectly tell about job security are the type of work they are doing, the types of enterprise in which they are working etc. Despite the existing laws most of the workers do not have job security. Here the indicators that we use to measure job security are: '*enterprise type*' and '*type of contract*', the definitions and measurements of which are given in the next section.

Income Security: As mentioned earlier, the second indicator taken for analysing quality of work in this study is income security. There are differences in the ways in which income is distributed. It can be at regular intervals, daily, piece rate and so on. Kantor *et al.*, (2006), while analyzing the decent work deficits in informal economy,

⁹ ILO (1999)

includes earnings from work (kind of wage that is been earned), regularity of income (will be captured by method of payment) as a method of measuring income security along with some other measures like variations in earnings, ability to save, etc. The study also shows that the existence of higher work quality in the case of salaried workers, as a result of the range of non wage benefits they obtain. *Average wage per day* and *method of payment* are the indicators taken to measure income security in this study.

Conditions of Work: The third indicator of determining quality of work is though measuring conditions of work. By condition of work we mean, criterion and facilities that a worker benefit from the work place. Importance of analysing conditions of work is been highlighted by many studies¹⁰. These studies show that the working conditions in most of the enterprises are of low quality. Conditions of work can be determined through the place of their work, wages they earn, social security benefits they get, other kinds of security at the work place and so on. ILO (2002) points out that, conditions of work are considered as one of the basic minimum standards necessary to analyse the conditions of informal economy. By condition of work ILO mainly includes wage, occupational safety and health and social services. NCEUS (2007) includes two components in conditions of work. They are physical conditions of work and duration and the timing of work. The physical conditions at the work place would include space, ventilation, illumination, temperature, humidity, hygiene and so on, that affect the health and safety of workers. Most of the studies in this regard show that, majority of workers do not get any kind of benefits mentioned above, mainly because of the existence of informal work in the economy. Some of them are basic needs, some are to promote work and others are to compensate grievances at work. Thus, to incorporate the aspects mentioned by different studies, here the indicators taken to measure conditions of work include: *social security benefits, location of work place, and number of workers in the enterprise*. Detailed description of these indicators is explained later in this chapter.

¹⁰ ILO (2000, 2002), Sundaram (2008), Mazumdar Dipak, (2008), Jaivir Singh, (2003)

3.2 Data Source and Methodology

For analysing quality of work in service sector data is taken from National Sample Survey Organisation's (NSSO) survey on employment and unemployment 61st round (7th quinquennial survey). From the 61st round, unit level data only those workers who are engaged in service sector activities are taken for the study. We include NIC 50 to 99 at 2 digit level which consists of 26 industries in service sector. List of industries is given in Appendix, Table 11. Workers are identified on the basis of their activity status that is according to Usual Principal Activity Status. We try to explain the quality of work in service sector using percentages, simple correlations and also with the help of some indices calculated using the indicators from the survey. From the indicators used for measuring quality, the one which represent the least security in each category is taken to calculate index. The index thus build would assign an index value between 0 and 1 for each of the 26 industries in the service sector. The calculated quality index is an index of deprivation of security, rather an index of vulnerability. Details of method of index calculation are explained later in this chapter.

This study attempts to measure quality on the basis of three broad indicators as mentioned earlier (job security, income security and conditions of work). These broad indicators are obtained using eight major indicators from the survey. Status of worker, type of enterprise, type of contract, average wage per day, methods of payment, social security benefits, location of work and number of workers in enterprises. The eight indicators are grouped in the following manner to obtain the three major indicators of quality of work. The indicators that measures **Job Security** are: Type of enterprise and Type of contract. **Income Security**: Average wage per day (in rupees) and Method of Payment. **Conditions of work** includes: Social Security Benefits, Location of Work Place, and Number of workers in the enterprise. Each of the eight indicators consists of different sub-indicators, which again is obtained by clubbing certain indicators that are available in the survey results. These sub-indicators and their respective variables are explained below. Table 3.1 illustrate these different indicators used in the study and its corresponding sub-indicators and also the indicators available in the survey.

The NSSO survey provides mainly three categories of workers according to their status. They are *self employed*, *regular workers* and *casual workers*. *Self employed* includes those who are *own account workers*, *employers* and those *worked as helper in*

household enterprise. Regular workers are those who are *regular salaried* or *wage employed* and *casual workers* include those who are *casual wage labour in public works* and *those worked as casual wage labour in other types of work*.

For calculating the quality index, one of the problems faced was regarding the shortage of data, as value for all indicators was not available for all workers. Particularly with respect to self employed workers, since they do not earn wages or salary, its indicators were not available. Similarly self employed workers do not have any contract and are not eligible for any of the social security benefits given in the survey schedule. Because of all these problems while calculating quality index, whole workers in service sector is divided into two on the basis of status of worker; 'self employed' and 'wage employed (adding both regular and casual workers)'. Thus, we construct separate indices for self employed and wage employed and finally we arrive at a total quality of work index for each industry in the service sector by taking the simple average of these two indices.

Indicators for Building the Index of Job Security

Type of Enterprise: Type of enterprise is a profile of the ownership structure of the enterprises in the service sector. Enterprise types are classified into three different categories. First, '*single headed proprietary*' which is obtained by clubbing 'either male headed proprietary' or 'female headed proprietary' as given in the NSS survey. '*Partnership*' is the second category and this consists of the NSS sub-categories 'with same household members' and 'with members from different households'. '*Public sector and public or private limited enterprise*' is the third type of enterprise taken for analysis. To obtain this the indicator, workers in 'government or public sector' and those in 'public or private limited companies' are added from the survey. Fourth sub-indicator of enterprise type is named as '*other types of enterprise*', which is obtained by adding the indicators that are given in the survey as: workers engaged in 'co-operative societies/trust/other non profit institutions', 'employer's households' and 'others'.

'*Single headed enterprises*' are considered to be the most vulnerable type of enterprise compared to 'partnership' because risk as well as capital investment are borne by single person, while in proprietary it is shared. A worker in the single headed proprietor enterprises is subjected to the vagaries of the enterprises. Usually small in

size, and informal in nature, the workers in such firms are vulnerable as none of the labour laws are applicable and hence no security of job as well. The self employed entrepreneurs are highly vulnerable due to the more primitive state of organization of the firms, wherein the entrepreneur takes on the role of manager, worker, and seller and so on to himself. Then competing with better organized and efficient firms in other types of ownerships the survival of such firms are becomes difficult. Hence, such firms have much greater probability of closure than firms with better structure of entrepreneurship. Public sector and public or private limited companies, on the other hand, are considered to have advantages over proprietary as most of the workers in this category are regular salaried employees and earn some kind of the social security benefits. Thus for calculating index of quality, single headed proprietary is taken as it represent the most vulnerable in the whole set of indicators of enterprise type. We calculate the indicator for type of enterprise as follows.

$$\text{Enterprise Type}_i = \frac{\text{Workers in Proprietary Ownership}_i}{\text{Total Workers}_i} * 100$$

Where subscript 'i.' denotes the i-th industry

Type of Contract: Contract is one of the major indicators used to measure job security of workers. NSS survey categories can be reclassified into three groups. They are workers with: no written contract, written contract for one year or less and written contract for more than one year. The categories '*no written contract*' and '*written contract for one year or less*' is given as such in the survey. Whereas '*written contract for more than one year*' is obtained by adding workers who have written contract for more than one year but less than three years and workers with written contract more than three years. In the analysis, while calculating quality index, type of contract have two classifications. Workers are classified into 'those who do not have any contract' and 'those with written contract', which is obtained by adding 'written contract for one year or less' and 'written contract for more than one year'. Since workers with no written contract have least job security, it is taken as the next indicator of lack of job security in calculating index of quality. The indicator is calculated as follows:

$$\text{Contract Type}_i = \frac{\text{Workers with no Written Contract}_i}{\text{Total Workers}_i} * 100$$

where subscript 'i.' denotes the i-th industry

Indicators for Building the Index of Income Security

Average Wage Per Day: Wage or salary a worker earns is one of the major indicators used to measure income security. Wages and salary earnings (received or receivable) for work done during a week in terms of cash, kind and total are given in the survey. For analysis, the total wages and salary earnings are taken and average wage per day in each industry is calculated.

Methods of Payment: Different methods of payment of wages and salary to the workers are taken to measure income security. The study takes three forms of methods of payment, *regular (weekly or monthly)*, *daily* and *other type of payments*. The survey gives number of workers who earn their wages on 'regular' (*weekly or monthly*) as well as 'daily' basis as such, whereas 'other' kinds of payments is obtained by clubbing both 'piece-rate kind of payment' and 'other kinds (as given in the survey)'. Along with average wage per day, for calculating index of income security, we take method of payment on 'daily' basis. Compared to regular wages, payment on daily basis shows more insecurity. Workers who earn daily wages are not assured of the same wages or the same employment the next day. Hence his level of vulnerability may be much higher than those earning term payments. Mostly, such wages are earned by the poorest among the workers, namely the casual workers. To measure the indicator of vulnerability in income security we calculate the following:

$$\text{Payment Method}_i = \frac{\text{Workers with Daily Wage Payment}_i}{\text{Total Workers}_i} * 100$$

Where subscript 'i.' denotes the i-th industry

Indicators for Building the Index of Conditions of Work

Social Security Benefits Received by Workers: 61st NSSO round provides data on availability of the social security benefits for the workers. For analysis, this study follows the same pattern of classification of availability of these social security benefits. The classifications of social security benefits that are mentioned in the survey are: Pension/provident fund, gratuity, health care and maternity benefits. The survey gives different combinations of these benefits. They are *either any one of these benefits, combination of any two of these benefits, all these benefits are available*

and finally those workers who gets *none of these benefits*. Since ‘workers who do not get any’ of the above mentioned social security will be in the worst situation, it is taken as one of the indicator in calculating the index of conditions of work.

$$\text{Social Security}_i = \frac{\text{Workers with No Social Security Benefits Payment}_i}{\text{Total Workers}_i} * 100$$

where subscript ‘i.’ denotes the i-th industry

Location of Work Place: Location of work place helps to measure the conditions of work. For analysis purpose we classify location of work place into four, ‘no fixed place’, ‘own dwelling, street with fixed place’, ‘own enterprise but outside dwelling and employer enterprise’ and ‘other place of work’. These categories are obtained by clubbing certain sub-categories given in the NSS survey. ‘*No fixed place*’ is obtained by adding workers with ‘no fixed place’ and those in ‘street without fixed location in both urban as well as rural areas’. Workers in ‘Own dwelling in both rural and urban area’, ‘street with fixed location in rural and urban area’, and ‘construction site in both rural and urban area’ are added to get ‘*own dwelling, street with fixed place*’. To obtain ‘*own enterprise but outside dwelling and employer enterprise*’ workers in ‘own enterprise outside own dwelling in both rural and urban area’, those working in ‘employer’s dwelling (urban & rural)’, in ‘employer’s enterprise/unit/office/shop but outside employer’s dwelling (urban & rural)’ are added. By ‘*other place of work*’ the study takes into account the data given in survey for workers in ‘others place of work in both rural and urban areas’. Worker with ‘no fixed place’ are in worst condition of work compared to other locations of work place. Hence it is taken as an indicator for measuring index of conditions of work.

$$\text{Work Place Location}_i = \frac{\text{Workers with No Fixed Place of Location}_i}{\text{Total Workers}_i} * 100$$

where subscript ‘i.’ denotes the i-th industry

Number of Workers (sector): The indicator is taken to measure ‘conditions of work’. The indicator is important as most of the legislative acts and laws that an enterprise can avail as well as fulfill is based on the number of workers in an enterprise. Here this indicator is divided into two sub-categories. Those enterprises which have workers less than nine are clubbed into one to represent the ‘*informal sector*’ and those enterprises

which have workers more than 10 represent the '*formal sector*'. From literatures we know that working conditions of workers in informal sector is vulnerable as they do not enjoy any kind of security which we talked about in the beginning of this chapter. Workers in informal sector are also taken as an indicator for measuring index of conditions of work.

$$\text{Number of Workers}_i = \frac{\text{Workers in Informal Sector}_i}{\text{Total Workers}_i} * 100$$

where subscript 'i.' denotes the i-th industry

Table: 3.1 Indicators used for Measuring Quality and Their Components.

Major Indicator	Indicators in the Study	Sub Indicators as given in Survey Schedule:
Status of Worker	Self Employed	<ul style="list-style-type: none"> • own account workers, • employer • those worked as helper in household enterprise
	Regular	<ul style="list-style-type: none"> • regular salaried/wage employee
	Casual	<ul style="list-style-type: none"> • casual wage labour in public works • those worked as casual wage labour in other types of work
	Wage Employed	<ul style="list-style-type: none"> • Regular + Casual workers
Enterprise Type	Single headed proprietary	<ul style="list-style-type: none"> • Proprietary male • Proprietary female
	partnership	<ul style="list-style-type: none"> • With same household • With members from different households
	public sector & public/private limited	<ul style="list-style-type: none"> • Government/public sector • Public/private limited companies
	others	<ul style="list-style-type: none"> • Co-operative societies/trust/other non profit institutions • Employer's households • Others
Type of Contract	No written contract	<ul style="list-style-type: none"> • no written contract
	written: one year or less	<ul style="list-style-type: none"> • written job contract: for 1 year or less
	written: more than one year	<ul style="list-style-type: none"> • written job contract: for more than 1 year to 3 year • for more than 3 years
Methods of Payment	Regular	<ul style="list-style-type: none"> • Regular monthly • Regular weekly
	Daily	<ul style="list-style-type: none"> • Daily payment
	Others	<ul style="list-style-type: none"> • Piece rate payment • Others
Wage	Average wage per day	<ul style="list-style-type: none"> • Wage and salary earnings for the work done during the week (RS)
Social Security Benefits	Any one,	<ul style="list-style-type: none"> • PF/pension, Gratuity, health care & maternity benefits
	combination of any two	<ul style="list-style-type: none"> • PF/pension, Gratuity, health care & maternity benefits
	all benefits	<ul style="list-style-type: none"> • PF/pension, Gratuity, health care & maternity benefits
	not eligible for any	<ul style="list-style-type: none"> • PF/pension, Gratuity, health care & maternity benefits
Location of Work Place	No fixed place	<ul style="list-style-type: none"> • No fixed place • Street without fixed location (urban & rural)
	Own dwelling, Street with fixed place	<ul style="list-style-type: none"> • Own dwelling (urban & rural) • Street with fixed location (urban & rural) • Construction site (urban & rural)
	Own enterprise but outside dwelling, Employer's enterprise	<ul style="list-style-type: none"> • Own enterprise outside own dwelling (urban & rural) • Employer's dwelling (urban & rural) • Employer's enterprise/unit/office/shop but outside employer's dwelling (urban & rural)
	Others	<ul style="list-style-type: none"> • Others(urban & rural)
No: of Workers ¹¹	Informal (on basis of number of workers in enterprise) ¹²	<ul style="list-style-type: none"> • less than 6 • less than 9
	Formal	<ul style="list-style-type: none"> • above 10 but less than 20 • Above 20

Source: Own Classifications and indicators as mentioned in NSSO 61st round of Survey on Employment and Unemployment.

¹¹ For calculation enterprises whose number of workers are 'not known' (as mentioned in the survey) is removed from the analysis.

¹² Mazumdar and Sarkar (2007) also defines formal informal category in the same basis.

Quality Index calculation: In order to measure and analyse quality of work in the 26 sub-sectors in service sector, indices of quality are calculated. The indices are calculated to measure insecurity in work in each sub-sector. As mentioned earlier, since it is difficult to obtain values of all indicators for all workers in the sector, whole workers in the sector are classified into two on the basis of their status of work, that is, workers who are 'self employed' and 'wage employed'. For all the 26 sub-sectors in the sector, on the basis of both these categories of workers, indices are calculated to measure 'job security', 'income security', 'conditions of work'. Along with these indices, to capture the total insecurity in each sub-sector, a total quality index is also calculated.

Thus from the eight major indicators explained above the sub-indicators used for calculating indices are: workers 'who are in proprietary' kind of enterprise, 'who have no written contract', 'avail wages/salary on daily basis', 'with no social security benefits', 'with no fixed place of work', 'who are in informal sector' and 'the average wage per day (in rupees)'. Since the data availability of these indicators differs in case of self-employed and wage-employed, the indices calculated are not with uniform indicators.

The indices calculated to measure insecurity of self employed workers are: index of job security, index of conditions of work and total quality index. Index of income security is not calculated for this category as they do not earn wages and hence there is no method of payment. Index of job security is calculated using the indicator 'workers who are engaged in proprietary kind of enterprise'. Though type of contract is also an indicator measuring job-security, because self-employed workers do not have any kind of contracts, the indicator is not used. Workers who 'do not have any fixed place' of work (location of work) and workers in 'informal sector' (number of workers in enterprise less than 10) is taken to calculate index of conditions of work in case of self-employed workers. 'Availability of social security benefits' is also an indicator to measure 'conditions of work', but as self-employed workers do not have provision for any kind of social security benefits, the indicator is not taken for analysis. The total index of quality for self-employed workers is calculated by adding the index of job security and index of conditions of work by giving equal weights. While calculating the index, since there are no self-employed workers engaged in *proprietary type of*

enterprise, without no fixed location of work place and informal worker, indices based on self-employed are not calculated for sub-sectors: 'Air transport' (NIC 62), 'Research and Development' (NIC 73), 'Private households with employed persons'(NIC 95) and 'Extra territorial organisations and bodies' (NIC 99).

Indices measuring insecurity of wage-employed workers are; index of job security, index of income security, index of conditions of work and total quality index. Index of job security is calculated by using two indicators; namely, 'workers who are in proprietary' kind of enterprise and 'workers who have no written contract'. Index of income security is calculated using 'average wage per day (in rupees) and methods of payment on 'daily base'. Indicators like workers 'with no social security benefits', 'with no fixed place of work' and those 'who are in informal sector' are taken to calculate the index of conditions of work. All these indices are aggregated to calculate the total quality index of wage-employed workers giving equal weights to all indices.

A Total Quality Index, measuring insecurity in each of the sub-sectors are calculated using the total quality index of self-employed and total quality index of wage-employed. Share of type of workers in respective categories (self employed and wage employed) in the sector is given as weight while computing the index.

Before calculating indices, the indicators are made scale free. Here we normalize the values using range equalization method. Normalized value of i^{th} indicator in s^{th} sub-sector ($s = 1, 2, \dots, 26$) for indicator whose maximum value shows best situation is:

$$N_{is} = (X_{i \max} - X_{is}) / (X_{i \max} - X_{i \min})$$

For indicators whose maximum value is considered to be worst, the method of normalizing is done in the following manner.

$$N_{is} = 1 - [(X_{i \max} - X_{is}) / (X_{i \max} - X_{i \min})]$$

N_{is} is the normalized value of i^{th} indicator in s^{th} sub-sector,

$X_{i \max}$ is the maximum value of i^{th} indicator among all sub-sectors,

X_{is} is the actual value of i^{th} indicator in s^{th} sub-sector,

$X_{i \min}$ is the minimum value of i^{th} indicator among all sub-sectors.

The value of index ranges between zero and one, where zero indicates best quality index and one indicates the least quality index.

The quality indices except total quality index of sectors are calculated giving equal weight to all the indicators/ indices. Indices are calculated in the following manner:

Quality index for s^{th} sector is:

$$I_s = \sum N_{is} / n$$

Where N_{is} is the normalized value of i^{th} indicator in s^{th} sub-sector and 'n' is number of indicators in the index.

Total quality index is calculated by giving shares of self-employed and wage-employed as weights. Therefore, the index is calculated using formula:

$$QI_s = (I_{s \text{ self}} * W_{s \text{ self}} + I_{s \text{ wage}} * W_{s \text{ wage}}) / (W_{s \text{ self}} + W_{s \text{ wage}})$$

Where, $I_{s \text{ self}}$ is the total quality index in s^{th} sector for workers who are self-employed,

$I_{s \text{ wage}}$ is the total quality index in s^{th} sector for workers who are wage-employed,

$W_{s \text{ self}}$ is share of workers who are self-employed in s^{th} sector

$W_{s \text{ wage}}$ is share of workers who are wage-employed in s^{th} sector

3.3 Empirical Results

The section deals with results of the analysis and its explanations. Before explaining the quality index, an attempt is done to explain the performance of different indicators in service sector in toto and for the 26 sub-sectors. Later correlations between the different indicators are estimated to see if the indicators representing different levels of vulnerability are related or not. The correlation results also support the selection of different indicators to represent the vulnerable in each index. At the later part of the analysis, different indices of quality are examined and the sub-sectors are ranked and grouped to give a clear picture followed by an exploration of the individual and household characteristics on the estimated index.

3.3.1 Indicators of Quality in Service Sector Overview

During 2004-05, share of workers in service sector is around 26.4 per cent (Table 2.5) of total workers. It is also observed from the table that maximum share of workers are occupied in the broad sub-sector 'Transport, storage, communication etc' (43.7 per cent of total workers in service sector). In this chapter, a more disaggregate level analysis of these four broad sub-sectors are done. For instance Table 12 (in Appendix) shows the distribution of workers in 26 sub-sectors of service sector during 2004-05. It is seen that, 'Retail trade' which comes under 'Trade, commerce, restaurant etc' occupies maximum share (31.4 per cent) of workers. 'Retail trade' mainly includes non-

specialised as well as specialized stores selling food, beverages, pharmaceutical, medical goods, etc. sale of second hand goods, trade without stores (via stalls and markets), repair of personal and household items like footwear, leather goods, bicycles etc. Next to 'Retail trade', the sub-sectors 'Land transport and transport via pipeline (NIC 60)' and 'Education (NIC 80)' employs most of the workers in service sector, around 14.4 per cent and 9.9 per cent respectively. All other sub sectors are having minor share (less than 10 per cent) of workers in the sector.

As mentioned earlier, the prominence of informal sector in providing employment is well understood. The same can be seen in service sector also. From the Table 12 (in Appendix) it is clear that 81.7 per cent of workers in total service sector are in the informal sector. Of the total workers in 'Retail trade', which is the sector with maximum number of workers in service sector, 98.4 per cent are in informal sector. All sub-sectors, except very few, is dominated by providing employment in informal sector.

Share of workers in service sector according to the indicators of quality in service sector are given in Table 3.2. From the table we can see that majority of workers in the sector are self employed. Around 51.1 per cent of workers in service sector are *self-employed* and 48.9 per cent are *wage-employed* worker. Within wage-employed workers, the shares of workers who are employed on regular basis are 41.3 per cent and remaining 7.6 per cent are casual workers. Type of enterprise is an indicator of job security. Majority (67.2 per cent) of workers are engaged in the most vulnerable type of enterprise that is single headed proprietary. 21.5 per cent of workers are in public sector and public/private limited companies, which is considered to be better off compared to other categories in the enterprise type. Around 61.9 per cent of total workers do not have any '*written contract*'. Thus, altogether indicators of job security in service sector shows that majority of workers are self-employed, with proprietary kind of enterprise and majority have 'no written contract'. Though a precise conclusion cannot be made, it can be inferred from these figures that workers in service sector are vulnerable to job insecurity. Majority of the workers suffer from lack of any assurance of employment for a definite period.

Table: 3.2 Distribution of Worker In Service Sector According to Different Indicators of Quality of Work.

Job Security	Status of Worker	Self-employed	51.1%
		Regular	41.3%
		Casual	7.6%
		Wage Employed (Regular + Casual)	48.9%
	Type of Enterprise	Proprietary	67.1%
		Partnership	3.5%
		Public Sector and Public/Private Ltd	21.5%
		Other types of enterprise	7.9%
	Type of Contract	No written Contract	61.9%
		Written <1 year	1.9%
Written >1 year		36.1%	
Written contract (any duration, either < 1 year or >1 year)		38%	
Income Security	Average Wage Per Day	in total service sector	Rs 157.62
	Method of Payment	Regular (monthly, weekly)	86.9%
		Daily	8.5%
Other (including piece rate)		4.5%	
Conditions of Work	Social Security Benefits	Any one	9.6%
		Any one from combination of two	5.0%
		All benefits	26.4%
		No benefits	59.0%
	Location of Work Space	No Fixed Place (including street without fixed place)	14.1%
		Own dwelling, Street with fixed place, Construction site	15.9%
		Own enterprise but outside dwelling, Employer's dwelling, Employer's enterprise but outside dwelling,	65.4%
		Others	4.6%
		Number of Workers	Informal
		Formal	18.3%

Source: Own calculation using data from NSSO 61st round.

With regard to income security in service sector, two indicators used to measure are average daily wage and method of payment of wages/salary to the workers. The *average daily wage* in the sector is Rs 157.62. Of the different methods of payment 86.9 per cent of worker's wages/salary is distributed on *regular* basis. Around 8.5 per cent of workers earn their remuneration on daily basis, which is considered to be the least secured methods of payment. The figures show that majority of workers are better off in case of income security, however, these indicators are calculated including that of the self employed workers hence the figures may not be the same when the self employed workers are sorted out.

Availability of social security benefits, location of the work place and number of workers in an enterprise are taken as indicators of conditions of work. Workers in service sector can be considered to be in very bad working conditions as given by the analysis results. The result shows that 59 per cent of workers in the sector do not get any kind of *social security benefits*. Looking into number of workers in an enterprise, 81.7 per cent are in *informal sector*. The indicators of location of work place show that, 14.1 per cent workers are in the least secured work place that is without any fixed place of work and 65.4 per cent of worker are in 'Own enterprise but outside dwelling, employer's dwelling, employer's enterprise but outside dwelling'.

As mentioned earlier, service sector is heterogenous and consists of varied kinds of works. The general inferences made in the case of total service sector need not be reflected in all sub-sectors. Following section tries to explain the general performance of sub-sectors in these indicators of quality.

3.3.2 Indicators of Quality in Service Sub-Sectors; An Overview

Before explaining the quality indices of sub-sector, first an overview of the entire quality indicator used in analysis is given here. Three measures of quality; job security, income security and conditions of work and the indicators used to explain these are described here.

Job security: Share of workers in each sub-sector involved in respective indicators are given in Table 13 in Appendix and the distribution of workers in each indicators of job security across 26 sub-sectors illustrated in Table 14 (see Appendix). Indicators of status of workers show that, the distribution of workers in each indicator across sub-sectors is not even; instead it is concentrating in few industries. Of the total self-employed workers in service sector, 50.8 per cent are in sub-sector 'Retail Trade' (Table 14 in Appendix). Similarly of the total regular workers in service sector, largest share of regular workers (21 per cent) are in the sector 'Education' and that of casual workers (32.8 per cent) are in 'Land Transport and transport via pipelines'. The distribution of workers within each sub-sector across different indicators give a clearer picture about the job-security they have.

Of the 4 broad sub-sectors in service sector, all industries within 'Trade, commerce, restaurant etc' have majority of workers as self employed. The sector consists of the

following sub-sectors: 'sale, maintenance & repair of motor vehicles, etc'. 'wholesale trade etc', 'retail trade', 'hotels & restaurants'. These sub-sectors have majority of workers in proprietary kind of enterprise and also majority do not have any kind of written contract. Here, sub-sectors apart from 'hotels and restaurants' are engaged in either wholesale or retail trade of goods and services. Goods range from food, beverages, pharmaceuticals etc. to waste and scrap (especially for recycling). Services include maintenance and repair of motorcycles, other vehicles to personal or household goods like footwear, leather goods, television, etc. The stores are either specialised in the sale of any of these products or non-specialised selling different products.

Among the sector 'Transport, storage, communication etc', the sub-sector 'land transport and transport via pipeline', have around 46.5 per cent of workers in self-employed category. The sub-sector have majority of workers engaged in proprietary kind of enterprise and with no written contracts. The sector includes workers engaged in railways, other land transport including freight transport through motor vehicles, bullock carts, rickshaw pullers, passenger transport including motor vehicles, taxi, etc. transport via pipeline includes, workers in transport of gases, liquids, workers in pump stations, maintenance of pipeline etc. second sub-sector is 'Water transport'. Majority of workers in 'water transport' are regular workers, and have written contract for more than one year, but most of them are engaged in proprietary kind of enterprises. 'Air transport' have 94.8 per cent of workers as regular workers, 96.2 per cent are engaged in public sector and public/private limited companies, and majority of workers have written contract for more than one year. The third sub-sector in 'Transport, storage, communication etc' is 'Supporting and auxiliary transport activities'. This sector includes mainly activities of travel agencies, cargo handling, warehousing and other transport agencies. The sector consists of majority of workers regular employed. Around 54.9 per cent are in proprietary kind of work and 64 per cent of workers in the sector do not have any kind of contract. 'Post and telecommunication', which is one of the dynamic sector occupies majority of workers as regular employees, with majority enjoying written contract for more than one year. 51.6 per cent of workers are in public and public/private limited companies.

The third sub-sector in the four broad classification of service sector is 'Financial intermediary, real estate etc'. The sector can be classified further into eight sub-sectors

according to two digit NIC classifications. The sector mainly consists of financial and related services, life & non-life insurance, mutual funds, chit funds, monetary intermediation, real estate, other business activities, computer and allied activities, etc. The sub-sector 'financial intermediation except insurance' have 84.9 per cent of workers engaged in regular kind of work, 62.9 per cent of workers in the sector are in public sector and public/private limited companies and around 65.1 per cent of them have written contract for more than one year. The sector 'insurance & pension funding except compulsory social security', have 52.6 per cent of workers as self-employed, around 58.4 per cent of workers in the sector are engaged in public sector and public/private limited companies and 72.3 per cent of them have written contract for more than one year. The sector 'Activities auxiliary to financial intermediation', which is a supporting sector to the above mentioned other two sub-sectors, occupies around 50.9 per cent of workers in regular kind of job along with 47.7 per cent engaged in self employed works. The sector have majority of people in proprietary kind of enterprises and only 36.2 per cent have written contract for more than one year. The sectors 'Real estate activities', 'Renting of machinery and equipments etc' and 'Other business activities' have majority of workers engaged in proprietary kind of enterprises with majority self employed and without any kind of written contract. Sectors 'computer and related activities' and 'research and development' on the other hand, have majority of workers, who are regular worker, working in public and public/private limited companies and with written contract for more than one year.

The fourth major sub-sector of service sector; 'Public administration, defence, personal services etc', is the most heterogeneous group. Within each sector the kind of work varies in terms of skill, remuneration, etc. for example, with the sector 'Education', the kind of work varies from tuition classes and other coaching centre to technical education. The sectors 'Public administration and defence' and 'Education' provides regular work for majority. Most of them are engaged in public and public/private limited companies, with written contract for more than one year. Around 68 per cent of workers in 'Health and social work' are engaged in regular jobs, but 51.8 per cent workers do not have any kind of written contract, and 48.1 per cent are engaged in proprietary kind of enterprises. The sector 'Sewage and refuse disposal, sanitation and similar activities' mainly consists of works like sewage disposal, garbage collection, removal of human wastes, other sanitation activities. The sector is important to support

growing urbanisation in any economy. Because of the nature of work, the sector accommodates low skilled workers and they are living in very bad conditions. The sector consists of around 43.1 per cent regular workers, 75 per cent are engaged in proprietary kind of work and majority without written contracts. Majority of workers in sectors; 'Activities of membership organisation', 'Recreational, cultural and sporting activities' and 'Other service activities' are self employed, engaged in proprietary kind of enterprises and have no written contract. 'Private households with employed persons' and 'Extra territorial organisations and bodies' shows that majority of workers are regular workers, engaged in 'other' kind of enterprises (other than the type taken for analysis), and have no written contract.

Income Security

Average wage per day in service sector is Rs 157.62 (See Table 15 in Appendix). Of the 26 sub-sectors in service sector, 'Sale, maintenance & repair of motor vehicles, etc', 'Wholesale trade etc', 'Retail trade', 'Hotels & restaurants', 'Land transport & transport via pipelines', 'Real estate activities', 'Renting of machinery & equipment etc', 'Sewage & refusal disposal, sanitation & similar activities', 'Activities of membership organisation', 'Recreational, cultural & sporting activities', 'Other service activities', 'Private households with employed persons', 'Extra territorial organisations and bodies' have average daily wage below the total sector's average. The sector 'Insurance & pension funding except compulsory social security' have maximum average wage of Rs 566.20 per day and the sector 'Private households with employed persons' have the least wage of Rs 46.74 per day. Apart from the sub-sector 'Other service activities' (which have maximum of 43.1 per cent getting wages on daily basis), workers in all other industries get wages on regular basis either monthly or weekly basis. Amongst them, 'Activities auxiliary to financial intermediation' and 'Real estate activities' have 100 per cent workers earning their wage on regular basis.

Conditions of Work

Of the 26 industries, only seven industries: 'Air transport', 'Post & telecommunication', 'Financial intermediation except insurance', 'Insurance & pension funding except compulsory social security', 'R&D', 'Public administration & defence' and 'Education' have majority of people eligible for all kinds of benefits Table 16 (Appendix). All other industries have majority of workers who are not eligible for any kind of social

security benefits. Table also shows the share of workers according to workspace in each sub-sector. Similar to total service sector experience, all industries shows majority of workers in 'own enterprise outside their dwellings or employer's enterprise in employer's dwelling or employer's enterprise outside employer's dwelling except 'Land transport & transport via pipelines' (38.6 per cent), 'Sewage & refuse disposal, sanitation & similar activities' (34.7 per cent), which have majority of workers with no fixed place of work. The Table: 12 in Appendix give distribution of workers in formal and informal sectors (enterprises with less than 10 numbers of workers is taken as informal sector) in 26 industries. 81.7 per cent of workers in total service sector are in informal sector. In sub-sectors except 'Water Transport', 'Air Transport', Financial intermediation except insurance', 'Insurance & Pension Funding except compulsory social security', 'Computer & related activities', 'R&D', 'Public Administration & Defence', informal workers forms majority. And for industries like 'Retail Trade', 'Real estate activities', Renting of machinery & equipment etc', 'Other service activities', 'Private households with employed persons', Extra territorial organizations and bodies', more than 95 per cent workers are in informal sector

On the basis of the per centage shares of workers engaged in each indicators of quality, sub-sector can be grouped in the following manner. The grouping is done according to the indicator in which maximum numbers of people are belonging to in each sub-sector. Degree of insecurity of workers decline as we move away from each group. On the basis of indicators of job-security, the 26 sub-sectors are grouped into six categories, in case of indicators of income security there are three groups and with conditions of work, sub-sectors are grouped into five. These groups are mentioned in the Table 3.3. It is observed from the table that Category of job security shows that, the maximum numbers of industries are in least secured category. To make the situation even worse, two industries which together contributes 45.8 per cent employment in the service sector ('Retail trade' and 'Land transport and transport via pipeline') are in least secure category. Sectors which show maximum job security are the one which need high skilled labourers. However, these industries have very less share in total workers in service sector. Except 'Education' and 'Public administration and defence', no other sectors have more than two per cent of total workforce in service sector. In income security, service sector is showing comparatively better position as except 'other service activities' maximum workers in all sectors get wages on regular basis. Also

the number of sectors which has higher wages compared to total service sector average, are approximately same as that of number of sectors having lower wages. However, it is just 30 per cent of the total work force who are getting income higher than the service sector average which shows that most of the workers are in less income category and it is just a few booming sector specially those which need high skilled labour are benefitting from the service growth. Most of the sectors have maximum workers who has fixed place of work and outside dwelling. Most of the sectors have maximum workers in informal sector and they are just five sectors which show maximum worker in formal category. These five sectors which show maximum number of workers in formal category have just about 11 per cent of total workers in service sector. These sectors are those which also come under maximum job security and are getting income higher than the service sector average. All these shows that only a few sectors are showing better performance as far as quality of work is concerned. These sectors are mostly in formal category and require high skilled labour compared to others. Although, 'Retail trade' and 'Land transport & transport via pipelines', are booming sectors in India and also have more than about 46 per cent of workers in service sector, the workers in these sectors are not benefitting form the growth as indicated by the high prevalence of insecurity of the workers.

Table: 3.3 Groupings of Sectors on the Basis of Indicators of Insecurity

Job Security	
1	Self employed, Proprietary, No-written contract
sectors	'Sale, maintenance & repair of motor vehicles etc', 'Wholesale trade etc', 'Retail trade', 'Hotels & restaurants', 'Land transport & transport via pipelines', 'Real estate activities', 'Renting of machinery & equipment etc', 'Other business activities', 'Activities of membership organisation', 'Recreational, cultural & sporting activities', 'Other service activities'.
2	Regular, 'other type of enterprise' have no written contract'
sectors	'Private households with employed persons' and 'Extra territorial organisations and bodies'
3	Regular, proprietary type of enterprise, no written contract
sectors	'Supporting & auxiliary transport activities etc' and 'Sewage & refusal disposal, sanitation & similar activities'
4	Self-employed, Public Sector & Public/Private Ltd, contract for more than one year
sectors	'Insurance & pension funding except compulsory social security'
5	regular, proprietary, written contract for more than one year
sectors	'water transport', 'Activities auxiliary to financial intermediation', 'Health & social work'
6	regular, public sector or public/private Ltd, written contract for more than one year
sectors	'Air transport', 'Post & telecommunication', 'Financial intermediation except insurance', 'Computer & related activities', 'R&D', 'Public administration & defence', 'Education'
Income Security	
1	Daily payment, average wage per day less than the service sector total average
sectors	'Other service activities'
2	regular payment, average wage per day less than the service sector total average
sectors	'Sale, maintenance & repair of motor vehicles etc', 'Wholesale trade etc', 'Retail trade', 'Hotels & restaurants', 'Land transport & transport via pipelines', 'Real estate activities', 'Renting of machinery & equipment etc', 'Sewage & refusal disposal, sanitation & similar activities', 'Activities of membership organisation', 'Recreational, cultural & sporting activities', 'Other service activities', 'Private households with employed persons', 'Extra territorial organisations and bodies'
3	regular payment, average wages per day is greater than the service sector average
sectors	'Water transport', 'Air transport', 'Supporting & auxiliary transport activities etc', 'Post & telecommunication', 'Financial intermediation except insurance', 'Insurance & pension funding except compulsory social security', 'Activities auxiliary to financial intermediation', 'Computer & related activities', 'Research & Development', 'Other business activities', 'Public administration & defence', 'Education', 'Health & social work'.
Conditions of Work	
1	no social security benefits, no fixed place of work and are in informal sector
sectors	'Land transport & transport via pipelines' and 'Sewage & refusal disposal, sanitation & similar activities'
2	no social security benefits, 'Own enterprise but outside dwelling, employer's dwelling, employer's enter but outside dwelling' and are in informal sector
sectors	'Sale, maintenance & repair of motor vehicles etc', 'Wholesale trade etc', 'Retail trade', 'Hotels & restaurants', 'Supporting & auxiliary transport activities etc', 'Activities auxiliary to financial intermediation', 'Real estate activities', 'Renting of machinery & equipment etc', 'Other business activities', 'Health & social work', 'Activities of membership organisation', 'Recreational, cultural & sporting activities', 'Other service activities', 'Private households with employed persons', 'Extra territorial organisations and bodies'
3	no social security benefits, 'Own enterprise but outside dwelling, employer's dwelling, employer's enter but outside dwelling' and are in informal sector
sectors	'Water transport' and 'Computer & related activities'
4	all social security benefits, 'Own enterprise but outside dwelling, employer's dwelling, employer's enter but outside dwelling' and are in informal sector
sectors	'Post & telecommunication' and 'Education'
5	all social security benefits, 'Own enterprise but outside dwelling, employer's dwelling, employer's enter but outside dwelling' and are in formal sector
sectors	'Air transport', 'Financial intermediation except insurance', 'Insurance & pension funding except compulsory social security', 'R&D', 'Public administration & defence'

Source: grouping based on calculations done using NSSO data.

3.3.3 Correlation Results

Before building index of quality, it would be better to find out the correlation of each indicator of quality with the other indicators. To analyse the quality of work in detail, in further analysis, total workers are divided into 'self-employed' and 'wage-employed' worker. The correlation results of these two categories of workers are discussed first and then the correlation results of indicators of vulnerability, thereafter. (See Table: 3.4).

It is seen that self-employed workers are showing highly significant positive correlation with 'single headed proprietary' (0.91) and slightly significant positive correlation with 'partnership' (0.25) kind of enterprises. Coming to their correlation with different combinations of social security schemes, it is found that there is moderate positive correlation (0.59) with those who are not availing any kind of social security benefits. Rest of the social security benefits self-employed workers indicated negative correlation (see Table: 3.4). With respect to the locations of work place, they have moderate positive correlation with 'no fixed location' (0.52) whereas, highly significant positive correlation with 'Own dwelling, Street with fixed place and Construction site' (0.81).

Further, it can be concluded from the table that self-employed workers showed moderate positive correlation (0.64) with informal sector. And, with the formal sector, they report moderate correlation, but it is negative (-0.64). Similar results were found in the case of different kinds of contracts available for the workers with workers who have 'no written contracts' (that is, 0.55). Further, with respect to the different methods of payment, self-employed workers have positive correlation with 'daily' payments and 'other' kinds of payment. However, comparing both, the correlation with 'daily' is moderate (0.52) and with 'others' it was slightly significant weak (0.39).

While the correlation results of self-employed workers are in the above explained manner, the correlation results of wage-employed workers are in contrary to the self-employment results. First of all, with the different types of enterprises, wage-employment workers showed moderate positive correlation with 'public sector and public/private Ltd' (0.68) and slightly significant relationship with 'other types of enterprise' (0.43). With respect to different kinds of social security benefits, these workers are better off, as they revealed positive correlation with all combinations of

availability of those benefits and negative correlation with 'those workers who do not get any kind of benefits'. Among the three combinations of the benefits, the correlation is moderate and positive with those workers 'who gets all kinds of benefits' (0.59).

Furthermore, wage-employed workers indicated moderate positive (0.70) correlation with the location of work: 'own enterprise but outside dwelling, employer's dwelling, employer's enterprise but outside dwelling' and positive but less significant correlation with the 'Others'. Moderate and positive correlation was found with formal sector that is, 0.64. With respect to different kinds of contracts, wage-employed workers have positive correlation with 'written contract for less than one year' and 'written contract for more than one year'. Amongst them, the correlation was positively moderate with 'written contract for more than one year' (0.59). Wage-employed workers have high positive correlation with 'regular' form of payment of wages/salary. Their correlation with average wage per day is also positive though slightly significant (0.45).

Since the quality indices are constructed to show the level of insecurity, the indicators used are showing the least quality in each category. Here the correlation results of these least quality indicators are discussed. Correlation results of different indicators are as follows:

1.) Among the different kinds of enterprises, the indicator that represents the most vulnerable condition are those workers who are engaged in 'proprietary' kind of enterprises. Workers who are in 'proprietary' type of enterprise show moderate and positive correlation (0.64) with those workers who are not eligible for any kind of social security benefits and also with workers who 'do not have any kinds of contact' (0.62). These workers are mainly engaged in informal sector, as given by the positively moderate correlation (0.66). With the indicators of location of work place, workers in proprietary kind of enterprises reported positive and moderate correlation with 'No Fixed Place' (0.54). On the other hand, with 'own dwelling, street with fixed place, construction site', it was positive and highly significant (0.76). Workers engaged in proprietary kind of enterprises showed moderate but negative correlation with 'average wage per day' (-0.56) and same is true with the 'regular payment of wages/salary' (-0.58).

2. Workers with 'no social security benefits' showed positive and slightly significant correlation with 'no fixed location' (0.36) and with 'own dwelling, street with fixed

place, construction site' (0.46) of work place. They registered highly significant and positive correlation with informal sector (0.96) and highly significant negatively correlation with 'average wage per day' (-0.87); indicating an increase in the number of workers with no social security. Their correlation with methods of payment showed moderate and positive correlation with 'daily' payments (0.63).

2.) Workers with no fixed place of work and informal sector showed positive and slightly significant correlation (0.43), they further indicated similar correlation with 'no written contract' (0.39) but moderate correlation with (0.58) 'other kinds of payment' of wages/salary. The correlation between workers who have 'no fixed place' of work and 'average wage per day' is negative and slightly significant (-0.33).

3.) Coming to the workers in informal sector, they reported highly significant but positive correlation with those who have 'no written contract' (0.93) and negative correlation with 'average wage per day' (-0.88). Their correlation with methods of payment of wages/salary is moderate and positive in case of both 'daily' (0.53) payment and payment of 'other kinds' (0.38).

4.) Workers with 'no written contract' also showed moderate and positive correlation with 'daily' (0.64) method of payment and with 'other' (0.47) types of payment. They showed highly significant but negative correlation with 'average wage per day' (-0.87). The correlation coefficients of 'average wage per day' and different methods of payment revealed that, there is moderate positive correlation between those who get wages on regular basis (0.50) and moderately negative correlation with 'daily' (-0.53) payment but negatively and slightly significant with 'other' types of payment (-0.37).

Thus, the selection of indicators of insecurity from each category can be justified with the help of these correlation results. All the indicators of insecurity; 'proprietary' kind of enterprise, 'no fixed location of work place', 'no social security benefits', 'no written contract' 'informal sector', 'daily-payment of wages' are positively correlated with each other and these indicators are negatively correlated with 'average wage per day'. The positive correlation of the indicators shows that all these insecurity indicators might be related with each other in all the industries and the negative correlation with 'average wage per day shows' that as the average wage per day decreases in a sector, workers are prone to suffer these insecure conditions.

Table: 3.4 Correlation Coefficients of Quality Indicators in 26 Service Sub-Sectors

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	1																						
2	-1	1																					
3	0.91	-0.91	1																				
4	0.25	-0.25	0.32	1																			
5	-0.68	0.68	-0.71	-0.16	1																		
6	-0.43	0.43	-0.52	-0.38	-0.22	1																	
7	-0.38	0.38	-0.36	-0.09	0.61	-0.23	1																
8	-0.37	0.37	-0.37	0.52	0.61	-0.31	0.31	1															
9	-0.59	0.59	-0.67	-0.19	0.97	-0.24	0.61	0.55	1														
10	0.59	-0.59	0.64	0.07	-0.96	0.28	-0.72	-0.65	-0.98	1													
11	0.52	-0.52	0.54	-0.13	-0.42	-0.20	-0.15	-0.36	-0.36	0.36	1												
12	0.81	-0.81	0.76	-0.03	-0.52	-0.37	-0.24	-0.33	-0.47	0.46	0.61	1											
13	-0.70	0.70	-0.67	0.05	0.46	0.33	0.12	0.34	0.39	-0.38	-0.91	-0.79	1										
14	-0.02	0.03	-0.05	0.12	0.13	-0.10	0.28	0.08	0.16	-0.19	0.17	-0.21	-0.30	1									
15	0.64	-0.64	0.66	-0.01	-0.96	0.27	-0.55	-0.70	-0.94	0.94	0.43	0.57	-0.45	-0.24	1								
16	-0.64	0.64	-0.66	0.01	0.96	-0.27	0.55	0.70	0.94	-0.94	-0.43	-0.57	0.45	0.24	-1	1							
17	0.55	-0.55	0.62	-0.05	-0.91	0.28	-0.66	-0.75	-0.92	0.96	0.39	0.45	-0.39	-0.18	0.93	-0.93	1						
18	-0.01	0.01	-0.04	0.64	0.12	-0.19	0.06	0.71	0.09	-0.20	-0.21	-0.01	0.10	0.05	-0.22	0.22	-0.39	1					
19	-0.59	0.59	-0.65	-0.09	0.95	-0.25	0.69	0.63	0.96	-0.98	-0.37	-0.48	0.39	0.18	-0.94	0.94	-0.98	0.19	1				
20	-0.51	0.51	-0.58	0.06	0.53	0.13	0.46	0.52	0.54	-0.59	-0.48	-0.52	0.55	-0.05	-0.51	0.51	-0.62	0.28	0.60	1			
21	0.52	-0.52	0.59	0.03	-0.56	-0.11	-0.53	-0.55	-0.57	0.63	0.36	0.44	-0.42	-0.02	0.53	-0.53	0.64	-0.27	-0.62	-0.96	1		
22	0.39	-0.39	0.45	-0.18	-0.37	-0.13	-0.25	-0.38	-0.38	0.40	0.58	0.55	-0.65	0.15	0.38	-0.38	0.47	-0.25	-0.45	-0.88	0.70	1	
23	-0.45	0.45	-0.56	0.02	0.82	-0.24	0.44	0.67	0.88	-0.87	-0.33	-0.38	0.34	0.12	-0.88	0.88	-0.87	0.29	0.86	0.50	-0.53	-0.37	1

Source: estimated using NSSO 61st round data.

Note: 1- self employed; 2-wage employed; 3-proprietary; 4- partnership; 5-public sector or public/private ltd; 6-other types of enterprise; 7-any one kind of social security; 8- combination of any two kinds of social security benefits; 9- all kinds of social security benefits; 10-no social security benefits; 11- no fixed place of work; 12- own dwelling; 13-outside own dwelling; 14- any other location of work place; 15- informal sector; 16- formal sector; 17- no contract; 18- written contract <1 year; 19- written contract >1 year; 20- regular method of payment of wages/salary; 21- daily payment; 22- other types of payment of wages/salary; 23- average wage per day. Correlation coefficient $r = 0$ implies insignificant correlation, $r = \pm < 0.25$ shows, $r = \pm$ between 0.25 and 0.50 shows slightly significant,; $r = \pm$ between 0.50 and 0.75 shows moderately significant, $r = \pm > 0.75$ implies highly significant and $r = 1$ shows perfect correlation.

3.3.4 Quality Indices

Quality index is calculated to measure the intensity of vulnerability that the workers are confronted with in each of the 26 sub-sectors of service sector. These indices are calculated for self-employed and wage-employed workers separately. Quality indices based on self-employed workers include: job security, conditions of work, and quality index for wage-employed workers include: job security, income security, and conditions of work. The quality index for total workers in each sub-sector is calculated by combining the quality index of self-employed and wage-employed workers, by giving their respective share in total workers in each industry as the weights. The index values and ranks of different sub-sectors are given in Table 17 (Appendix) and the share of workers in self-employed and wage-employed categories as well as share of workers in each indicator in self-employed and wage-employed are given in Table 18 (Appendix). The indices are calculated in such a way that all values lie between 0 and 1, where 0 indicates the best and 1 as the worst case (details of this is given in the methodology part of this chapter). For explanation purpose the sub-sectors are classified into four categories on the basis of the index values. Sub-sectors having index value greater than 0.75 are categorised as the 'most vulnerable' (MOV); index value between 0.50 and 0.74 as 'highly vulnerable' (HV); index value between 0.25 and 0.49 as 'moderately vulnerable' (MV) and index value less than 0.24 as 'least vulnerable' (LV). Table; 3.5 gives the details of the sub-sectors, which come under these categories.

Estimated Index of the self-employed workers

Job security index of self-employed workers shows that majority of the sub-sectors are in the 'most vulnerable' category, while that of index of conditions of work shows that most of the sub-sectors are in the 'highly vulnerable' category. Some sectors are keeping same status in these two indices. Sectors like 'Land transport and transport via pipeline' and 'Sewage and refuse disposal, sanitation and similar activities' are in the 'most vulnerable' category in these two indices of self-employed workers. Similarly, sectors like, 'Financial intermediation except insurance' and 'insurance & pension funding except compulsory social security' are 'highly vulnerable' in both these indices. The sector 'Public administration and defence' can be considered as better-off in these two indices as the sector is in the 'least vulnerable' category.

Index explanation according to wage-employed group

Indices based on wage-employed workers are almost evenly distributed between categories like 'highly vulnerable', 'moderately vulnerable' and 'least vulnerable'. Very less sub-sectors come in the 'most vulnerable' category. Though the sector 'Renting of machinery and equipments etc' showed 'highly vulnerable' situation in terms of conditions of work index of wage-employed workers, it is in the 'most vulnerable' category in terms of indices of job security and income security of wage-employed workers. Apart from these sectors, the sector 'Land transport and transport via pipeline', which is in the most vulnerable category in all indices of self-employed workers, is in the same category in terms of job security index and conditions of work index of wage-employed.

The sectors, 'Sewage and refuse disposal, sanitation and similar activities' and 'Recreational, cultural and sporting activities' are in the 'highly vulnerable' category, in all the indices of wage-employed category, except in index of conditions of work. The sectors, 'Sales, maintenance and repair of motor vehicles etc', 'Wholesale trade etc', 'Retail trade', 'hotels and restaurants', 'Activities of membership organisation', 'Private households with employed persons' and 'Extra territorial organisations and bodies' are in the 'highly vulnerable' group in all indices of wage-employed except in case of index of job security. 'Education' which is in the 'least vulnerable category' in terms of job security index shows 'moderate vulnerability' in income security and conditions of work.

Sectors like 'air transport', 'financial intermediation except insurance', 'insurance & pension funding except compulsory social security' and 'research and development' are in the category 'least vulnerable' in all the indices of wage-employed group. The sector 'Public administration and defence' which is in the category 'least vulnerable' in all indices of self-employed is in the same category for all indices of wage-employed except for index of income security.

While comparing the four categories of indices in case of the total quality indices, we found similar patterns. Only a few sub-sectors are in the 'most vulnerable' category. Sectors like 'Water transport', 'Post and telecommunication' and 'Computer and related activities', is in 'highly vulnerable' group, as per the total quality index in self-employed workers. The sector 'Other service activities' is in the 'most vulnerable

category according to all the total quality indices. The sector 'Renting of machinery and equipments etc' is in the 'most vulnerable' category in terms of total quality index of wage-employed workers. Most of the sub-sectors are in 'highly vulnerable' category. Sectors like 'Land transport and transport via pipeline', 'Sewage and refuse disposal, sanitation and similar activities', 'renting of machinery and equipments etc', 'other service activities' and 'Retail trade' are five of the 'most vulnerable' sectors given by very high index value. Whereas the 'least vulnerable' sectors are 'Air transport', 'R&D', 'Public administration and defence' and 'financial intermediation except insurance'.

While ranking the sectors according to the index values shows that 'Land transport and transport via pipeline' is the most vulnerable sector and 'Air transport' is the least vulnerable sector. Both these sectors come under the broad category of 'Transport, storage, communication etc'. 'Air transport' occupies only 0.1 per cent of total workers in service sector but 95.5 per cent of the total workers are in formal sector while that of 'Land transport and transport via pipeline', which occupies 14.4 per cent of workers in service sector have 86.3 per cent of workers in informal sector. The possible reason for this contrasting quality feature of sectors in same group may be because of the differences in the share of workers who are self-employed and wage-employed. 'Air transport' occupies 100 per cent of its workers in wage-employed category, whereas 'Land transport and transport via pipeline' occupies around 46.5 per cent in self-employed category.

Table: 3.5 Service Sub-Sectors in Indices According to the Degree of Vulnerability

Index value	self-employed			Wage-employment				Total quality index (NIC code)
	Job security (NIC code)	Conditions of work (NIC code)	Total (NIC code)	Job Security (NIC code)	Income Security (NIC code)	Conditions of Work (NIC code)	Total (NIC code)	
MOV (Iv > 0.75)	50, 51, 52, 55, 60, 61, 63, 64, 67, 70, 71, 72, 74, 80, 85, 90, 91, 92, 93	60, 90	52, 60, 90, 91, 92, 93	50, 51, 52, 55, 60, 70, 71, 93	71, 93	60, 90, 93	71, 93	52, 60, 71, 90, 93
HV (0.50 < Iv < 0.74)	65, 66	50, 51, 52, 55, 63, 65, 66, 67, 70, 71, 74, 80, 85, 91, 92, 93	50, 51, 55, 61, 63, 64, 65, 66, 67, 70, 71, 72, 74, 80, 85,	63, 74, 92, 90	50, 51, 52, 55, 60, 63, 90, 91, 92, 95, 99	50, 51, 52, 55, 70, 71, 91, 95, 99	50, 51, 52, 55, 60, 70, 90, 91, 92, 95, 99	50, 51, 55, 63, 70, 74, 91, 92, 95, 99
MV (0.25 < Iv < 0.49)	-	61, 64, 72,	-	61, 64, 72, 85, 91, 95, 99	61, 64, 70, 74, 75, 80, 85	61, 63, 64, 67, 74, 80, 85, 92	61, 63, 64, 74, 80, 85	61, 64, 66, 67, 72, 80, 85
LV (Iv < 0.24)	75	75	75	62, 65, 66, 67, 73, 75, 80	62, 65, 66, 67, 72, 73	62, 65, 66, 72, 73, 75	62, 65, 66, 67, 72, 73, 75	62, 65, 73, 75

Note: MOV- the most vulnerable; HV- highly vulnerable; MV- moderately vulnerable; LV- least vulnerable.

50-'Sales, maintenance and repair of motor vehicles etc'; 51-'Wholesale trade etc'; 52-'Retail trade'; 55-'hotels and restaurants';

60-'Land transport and transport via pipeline'; 61-'Water transport'; 62-'Air transport'; 63-'Supporting and auxiliary transport activities';

64-'Post and telecommunication'; 65-'Financial intermediation except insurance';

66-'Insurance & pension funding except compulsory social security'; 67-'Activities auxiliary to financial intermediation';

70-'Real estate activities'; 71-'Renting of machinery and equipments etc'; 72-'Computer and related activities'; 73-'Research and development'

74-'Other business activities'; 75-'Public administration and defence'; 80-'Education'; 85-'Health and social work';

90-'Sewage and refuse disposal, sanitation and similar activities'; 91-'Activities of membership organisation';

92-'Recreational, cultural and sporting activities'; 93-'Other service activities'; 95-'Private households with employed persons';

99-'Extra territorial organisations and bodies'

3.3.5 Patterns of Distribution of Workers According to the Quality Index

Here, the above classification of the service sector industries in terms of vulnerability based on the quality index is used to analyze the patterns of employment in terms of the quality of employment.

Table: 3.6 Distribution of Workers in the Service Sector for Different States and Union Territories for Different Codes of Quality Index (per cent)

States/Union Territories	Indices category according to degree of vulnerability				Total
	1	2	3	4	
Andhra Pradesh	54.7	22.6	15.0	7.7	100
Bihar	67.6	15.4	11.9	5.1	100
Chhattisgarh	45.5	25.6	18.4	10.6	100
Gujarat	54.1	20.4	16.2	9.2	100
Haryana	52.6	20.6	16.9	10.0	100
Himachal Pradesh	40.4	17.9	29.0	12.8	100
Jharkhand	60.2	13.4	20.8	5.6	100
Karnataka	47.8	24.9	17.9	9.4	100
Kerala	46.1	26.3	18.8	8.7	100
Madhya Pradesh	50.2	19.2	17.3	13.3	100
Maharashtra	44.7	26.9	17.4	11.0	100
Orissa	52.3	18.9	19.1	9.6	100
Punjab	52.9	19.0	17.0	11.1	100
Rajasthan	50.2	22.7	18.1	8.9	100
Tamil Nadu	46.3	26.0	16.3	11.3	100
Uttaranchal	43.9	15.6	24.0	16.6	100
Uttar Pradesh	60.2	17.2	14.8	7.9	100
West Bengal	53.6	22.4	16.0	7.9	100
Rural	58.4	17.3	16.9	7.4	100
Urban	45.8	25.8	16.2	12.2	100
All India	51.6	21.9	16.5	10.0	100

Source: Own calculation using data from NSSO

Note: 1-most vulnerable; 2-highly vulnerable; 3-moderately vulnerable; 4-least vulnerable

It can be seen from the table that, majority of the workers in the service sector fall in the category of 'most vulnerable' (51.6 per cent) followed by 'highly vulnerable' (21.9 per cent), 'moderate vulnerable' (16.5 per cent) and 'least vulnerable' (10 per cent), as per the total quality index (see Table 3.6). Similar pattern is observed for both urban and rural workers. Workers in urban area are better off compared to All India average, both in most vulnerable and least vulnerable compared to workers in rural area. While

in terms of most vulnerable the share of workers in urban is lesser than the all India average and more in case of least vulnerable category.

State wise analysis showed that, majority of the workers fall under the most vulnerable category in terms of quality index in all the states. The distribution of workers in the category ranges between 40.4 (Himachal Pradesh) per cent and 67.6 (Bihar) per cent. Out of 18 states, nine states are better off as compared to the all India average in the 'most vulnerable' category. Here, along with some of the fast growing states like Maharashtra and Himachal Pradesh, some of the poor states like Chhattisgarh, Rajasthan and Madhya Pradesh are showing better position compared to all India average. Similarly pattern is seen in case of least vulnerable category also, with Uttaranchal as the best performer (16.6 per cent). Gujarat which showed remarkable growth performance after liberalisation is worse off compared to all India average. In some of the poor states like Orissa, Rajasthan, Madhya Pradesh the total per centage of vulnerable and moderately vulnerable categories are comparatively higher than some of the highly growing states like Gujarat and Haryana. There is need to investigate the reasons behind this pattern. Kerala which is one of the states with high growth of service sector and occupies around 46 per cent of workers is better off as compared to all India in of most vulnerable category, however, not in least vulnerable category.

Comparing males and females, the share of the male workers (55.7 per cent) is dominated in the most vulnerable category than in the female workers (30.9 per cent). Male workers are concentrated in the two extreme categories (most vulnerable group and least vulnerable). On the other hand, female workers are concentrated in the moderate vulnerable category. The high share of male workers in the most vulnerable category is because of the nature of the sectors that belongs to that category. Especially the sector 'Retail trade' is occupies mainly self-employed male workers rather than female and the female workers are concentrating in sectors like 'Financial intermediation except insurance', 'Public administration and defence' etc. where the workers are relatively safe.

The Table 3.7 also gives the details of general-education level of the workers. It can be observed from the table that, as education level increases, workers tend to be in less vulnerable jobs in all the categories of quality index. Further, it is seen that, till the middle education, the share (in most vulnerable group), is almost stagnant and later on

there is a sharp improvement in the quality. Up to higher secondary, maximum workers (around 60 per cent) are in the most vulnerable category. In comparison with most vulnerable category, the percentage share of workers in moderate vulnerable group increases as the education level increases. Skilled workers is necessary for the sectors (which provide better quality work) that comes in the least vulnerable category and this is true as shown by the high share of workers with education level more than secondary level.

Table: 3.7 Distribution of Workers According to Household and Individual Characteristics as Per Categories of Quality Index (Per cent)

Code	1	2	3	4	Total
Sex					
Male	55.7	20.8	13.0	10.5	100
Female	30.9	27.5	34.0	7.6	100
General Education					
Illiterate	64.8	28.9	3.2	3.1	100
Literate without formal schooling	64.5	28.6	2.0	4.9	100
TLC	66.4	26.2	1.9	5.6	100
Others	59.4	28.5	6.2	5.9	100
Below primary	65.1	26.8	3.8	4.3	100
Primary	64.7	24.7	5.1	5.4	100
Middle	62.7	22.7	7.2	7.4	100
Secondary	53.6	18.8	16.0	11.6	100
Higher secondary	42.0	17.2	23.3	17.4	100
Diploma	24.9	15.6	46.7	12.9	100
Graduate	22.7	16.8	39.6	20.9	100
Post Graduate and Above	12.4	13.1	58.0	16.5	100
Social Group					
Schedule Tribe	47.7	19.0	19.5	13.9	100
Schedule Caste	52.3	21.7	13.0	13.0	100
Other Backward Class	57.8	20.4	14.2	7.70	100
Others	46.1	23.6	19.7	10.6	100
Household Size					
Small (below or equal to 4)	45.9	22.7	19.8	11.6	100
Medium (5 to 9)	55.1	21.7	13.9	9.2	100
Large (10 to 19)	59.9	18.5	15.2	6.5	100
Largest (20 and above)	55.9	21.80	18.7	3.5	100

Source: Own calculation using data from NSSO

Note: 1-most vulnerable; 2-highly vulnerable; 3-moderately vulnerable; 4-least vulnerable

All social groups have majority of workers in the most vulnerable category, which is observed from the Table 3.7. Amongst them, Other Backward Class dominated with maximum share of workers (59.9 per cent) in the same category. Those workers who belong to the group SC and ST are better off than the Other Backward Class (OBC) community with lesser percentage in most vulnerable category and more percentage in least vulnerable category. SC and ST also show better position than 'others' in least vulnerable category. This may be due to the reason that most of the worse off SC and ST are active as agriculture and industrial workers, and those who choose to work in service sector may be employed in public sector because of reservation. This is evident from the fact that shares of ST and SC workers who are employed in 'government/public sector' out of their total in service sector are 30.5 and 22.1 per cent respectively (as per NSSO 61st round) as compared to OBC and 'Others' who are respectively 14.8 and 19.4 per cent in government/public sector'. In terms of household size, generally as the household size increases, the share of workers in most vulnerable category is increasing but we can see that for the households with more than 20 members has lesser share of workers in the category. This could be because of very small sample that fall under this group. Within least vulnerable category, as household size increases, the percentage share of workers came down.

The main conclusion from the table is that, female workers are less vulnerable compared to male workers. Education level and high household size attribute to make workers to be in less quality jobs. Those workers who have low education level and large household are most vulnerable among other workers. This may be due to the fact that lesser education level provides limited opportunity to be in better quality works. Also SC and ST are comparatively better off than OBC which is due to their higher presence in public sector jobs.

3.4 Summary

To sum up, the objective of this chapter was to measure quality of employment in the sector using some indicators that are available from the 61st round of NSSO on employment and unemployment along with analysing the distribution of workers in service sub-sectors (26 sub-sectors). Share of workers across 26 industries in service sector shows that, 'Retail trade' (31.4 per cent), 'Land transport & transport via pipelines' (14.4 per cent) and 'Education' (9.9 per cent) are the sub sectors with majority of workers are distributed. Distribution of workers in other sub-sectors is very

less. Majority of workers in service sector are informal workers. The indicators of quality of work show that service sector and sub-sectors are poor in quality of work. Total quality index shows that, the sub-sector 'Air transport' (NIC62) is the best and 'Land transport & transport via pipelines' (NIC60) is the worst. Though quality wise the sector is best, share of total workers in 'Air transport' is meager. Opposite is the case for 'Land transport & transport via pipelines', where the sector is second largest in share along with poor quality of work.

It is evident from the indices that the self-employed workers are comparatively more vulnerable than the wage-employed. The workers are much better-off in the case of sectors which need skill labour given by the index value. Workers of booming sectors (both self employed and wage) like 'Retail trade' and 'Land transport and transport via pipeline' shows high vulnerability. As per the quality indices, 'Public administration and defence' is showing best performance except in case of index of income security. There is quite large difference among states on the basis of vulnerability where the most vulnerable category shows the share to vary by 27 per cent when comparing the maximum and least share in the category. Not only there is wide variation in the share of workers in the category, both rich as well as poor states also come in better performers in terms of quality. There is also difference in the quality of work between the male and female workers. Education plays an important role in determining the sector in which the workers belong to as give by inverse trend in the share of workers and level of education. The social groups show that the workers in SC&ST category to be better-off compared to Other Backward Class, which is due to the reason that those SC and ST who are employed in service sector are working in public sectors. One of the factors to which this trend can be attributed is reservation for these categories in public sector jobs.

Chapter IV

Conclusion and Policy Implications

We have reached a stage wherein we could sum up the study and highlight its major conclusions and put forward certain policy implications. We have seen that, Indian economy, driven by the service sector, has been recording remarkably higher growth since the 1980s. The recorded growth rates were impressive not only in terms of her past performance but by the general trends in the developing countries. This high growth in service sector appears to have contributed to an unconventional service oriented structural change in the economy. While service sector is traditionally known to be highly employment intensive, available empirical evidence in India tend to suggest that employment growth in this sector had been rather pale in comparison to the output growth. A wide range of studies on service sector addressing various issues related to the structural change, reasons for high growth and its sustainability at national as well as regional level notwithstanding, there has been very few rigorous empirical studies looking at the employment dimension in the service sector. The available studies, though limited in number, were focused on the quantitative dimensions and thus leaving the issue of quality of work in the service sector almost unattended. The present study takes this as the point of departure from the existing studies and has made an attempt to fulfill this gap.

The overall aim of the study was to analyse the output-employment relation in the service sector, since 1980s. Specifically, the objectives of the study were firstly, to study the trends and patterns of output and employment in the service sector and secondly, to analyse quality of service sector employment in terms of their various aspects of vulnerability such as job security, income security and conditions of work. For the sake of analysis, the whole period (1983 to 2004-05) of study was divided into pre-reform and post-reform periods. Simple percentages, growth rates and correlations, have been calculated to accomplish the aforesaid objectives. In accomplishing the first objective, the study analysed the relationship between employment and output in two ways: first, by estimating employment elasticity and second, by using location quotient technique. For second objective, the quality of work in the service sector is measured by calculating

various quality of work indices. In what follows we shall deal with the objective this chapter.

To begin with, the study supports the view that India is undergoing an unconventional, service oriented structural change. The pace of structural transformation in terms of output generation accelerated in the post reform period. Within the service sector, there was no major change, only exception is second half (1999-00 to 2004-05) of the post-reform period. The contribution of service sector to the total growth rate was around 65.7 per cent. However, the structural change in terms of output growth in service sector was not accompanied commensurately in employment growth. Elasticity of employment in the sector, unlike in developed economies, remained less than one and even continued to decline. Even though employment growth rate during the period 1999-00 to 2004-05 showed signs of revival, an analysis of the contribution of the sector toward total employment growth has shown that its contribution has shown no marked improvement but a marginal decline. Interestingly enough it is the secondary sector that contributed major part of the total employment growth rate during this period.

The regional patterns in service sector employment confirm the argument that there is a regional differentiation in terms of employment growth and output growth. Estimation of location quotients showed that while employment growth in the service sector is concentrated within some states of the country, output growth is occurring in some other regions. The eastern states record high employment growth, while the southern states record high output growth. This phenomenon is quite understandable. In the eastern states, the cushion provided by agriculture sector in terms of employment absorption is gradually disappearing, and the surplus labour is moving into non-farm employment, mainly in the rural regions, while in the southern regions the high skill and labour intensive industries such as the Information Technology Industry, Banking and Finance Industries are growing.

The study also brings out the growing trends of feminization of work in the low quality, low value adding services such as the community and personal services. A large share of the recorded employment growth in the period after 1999-2000 has been with that of the

female employment. This is also occurring within the most vulnerable industries of the service sector. Another point of concern had been entrenched nature of informality within the service sector.

These aspects of the patterns of employment raise the issue of the quality of work within the service sector. The indicators selected for measuring quality revealed that workers in service sector are vulnerable in terms of job security, income security and conditions of work. Majority of the service sector workers are self-employed, engaged in single proprietary kind of enterprises. Most of the workers in the service sector were without any kind of written contracts (61.9 per cent) or social security benefits (59.0 per cent). Moreover, 81.7 per cent of total workers in service sector are in the informal sector. The sector 'Retail trade' employed maximum share (31.4 per cent) of workers during 2004-05, out of which 98.4 per cent were in the informal sector.

To understand the quality of work within the services sector and to facilitate comparison across different sub-sectors, an index of quality of work is constructed. The quality of work index was built using the NSSO survey on Employment and Unemployment in 2004-05. The index, taking cue from the concept of Decent Work of ILO, was calculated using three indicators of vulnerability, namely job security, income insecurity and conditions of work.

It is also concluded from the findings that the indicators of insecurity indicated positive correlation with each other but negative correlation with average wage per day. The total quality index showed that five out of 26 sub-sectors, which employ major part of service sector workers, are in the most vulnerable category. The sector 'Air transport' is the most secured (total quality index value is 0.04) and 'Land transport & transport via pipelines' is the least secured (with total quality index value 0.85). Though quality wise the sector is best, share of total workers in 'Air transport' is meager. Opposite is the case for 'Land transport & transport via pipelines', where the sector is second largest in share but quality of work is poor. But since the sectors are not following this inverse trend of quantity and quality, it is not possible to generalize that the sectors where the quantity exceeds, quality is low.

An attempt at analyzing the characteristics of the workers and the sector they belonged to, as per total quality index showed that amongst the total workers, the workers having low levels of education and large family size are found to be employed in the sectors which are in most vulnerable category. Further, share of workers who are in most vulnerable condition are higher in rural area than in urban areas and they belong to the socially deprived sections of the society. In one hand, male workers are mainly concentrated in the groups namely 'most vulnerable' and 'least vulnerable' and on the other, female workers are in the 'highly vulnerable' and 'moderately vulnerable' category. Since the sectors where workers are in most vulnerable condition are occupying major part of the total service sector, in all cases, the share of workers belonging to this category is very high.

The policy implications are as follows:

- Majority of the workers in the service sector are self employed. They are also highly vulnerable in terms of income as well as conditions of work. There is need for public intervention in this particular group. Self employment, as we have seen in the study without adequate levels of education, and skills can lead to very precarious conditions of employment. Here, the state could take up measures to facilitate their skill empowerment supported with adequate finance.
- According to neo-classical approach, labour market should be flexible, but trade unions oppose this argument by saying that workers' bargaining power is very low which leads them to be in anxious condition. While suggesting policy one should keep in mind both the arguments which will not make workers more vulnerable.
- Regional disparities are visible and evident in service sector growth and output. The regionally differentiated growth of output and employment would have very adverse impact on the economy in terms of regional differences in labour productivity and hence, in per capita income. Measures that would mitigate regional differences in the growth of highly productive sectors should be taken up. At the same time, manufacturing sector should be encouraged through various incentive systems to grow faster at least in these backward regions so that surplus labour gets absorbed into more productive goods sectors than in residual services in the rural hinterlands.

- Rural India is lagging behind in terms of both output and employment. The growth of the services sector in the rural economy is very closely related to the dynamism of the agriculture sector. Rural services sector consists mainly of agriculture supporting services. Hence, the acceleration of growth in the agriculture sector would automatically generate a vibrant service economy in the rural areas.
- As we saw, the share of workers in informal sector is very high, it is not possible to accommodate all in the formal sector. The social security benefits as recommended by the National Commission of Enterprises in Unorganised sectors need to be implemented effectively.

The prominence and significance of the service sector has been gaining new heights and is likely to be so in the near future. While the growth of the sector along with its declining employment generation potential has attracted the attention of policy makers and the academia, the quality of the employment that has been generated has not received the attention that it deserves. The present study has been made an attempt at addressing some of the important issues relating to quality of service sector employment and has succeeded in highlighting certain emerging trends.

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APPENDIX

A1. Sectoral Contribution to Total Growth Rate.

Contribution of different sector in growth of total GDP / employment is calculated by using following method¹:

$$Y = P + S + T$$

$$\Delta Y/Y = (g_p P + g_s S + g_t T)/Y$$

$$\Delta Y/Y = g_p P/Y + g_s S/Y + g_t T/Y$$

Where:

Y is GDP/total employment.

P, S, T, Y denote Primary sector, Secondary sector, Service sector and total GDP/employment respectively, and P/Y, S/Y and T/Y denote the share of Primary, Secondary and Service sector in total GDP/employment respectively. g_p , g_s , g_t denotes the growth rate of Primary, Secondary and Service sector income/employment respectively.

¹ See Pushpangadan and Prameswaran (2006).

Table: 1 Rural Female Employment Share and Growth rates in India

Sector	1983	1987-88	1993-94	1999-00	2004-05
Rural Female Employment Share					
Primary	85.7	83.1	85.1	84.4	82.0
Secondary	8.1	10.7	8.6	8.9	10.4
Service	6.1	6.2	6.3	6.7	7.6
Total employment	100	100	100	100	100
Trade, commerce, restaurant etc	38.7	38.7	34.9	34.3	36.8
Transport, storage, communication etc	1.1	1.6	1.6	1.5	2.6
Other services	60.2	59.7	63.5	64.2	60.5
Of Which:					
Financial intermediary, real estate etc	-	-	1.6	1.5	1.3
Public administration, defence, personal services etc	-	-	61.9	62.7	59.2
Total service sector employment	100	100	100	100	100
Rural Female Employment Growth Rates					
	1983 to 1987-88	1987-88 to 1993-94	1993-94 to 1999-00	1999-00 to 2004-05	
Primary	0.72	1.59	1.35	1.73	
Secondary	8.72	-2.47	2.07	5.63	
Tertiary	1.83	1.42	2.53	5.00	
Total	1.52	1.19	1.49	2.33	
Trade, commerce, restaurant etc*	1.86	-0.30	2.24	6.50	
Transport, storage, communication etc*	11.01	1.15	1.49	17.61	
Other services	1.61	2.47	2.72	3.78	
Of Which:					
Financial intermediary, real estate etc	-	-	1.49	2.39	
Public administration, defence, personal services etc	-	-	2.75	3.81	

Source: Estimated using data from NSSO

** Share in Service sector*

Table: 2 NSDP Growth Rates of Service Sub-Sectors in Different States

States	1983 to 1987-88				1987-88 to 1993-94				1993-94 to 1999-00				1999-00 to 2004-05			
	S1	S2	S3	Service Total	S1	S2	S3	Service Total	S1	S2	S3	Service Total	S1	S2	S3	Service Total
Andhra Pradesh	9.8	5.4	8.9	8.9	7.7	-0.3	11.9	8.7	5.9	8.8	7.8	7.3	5.8	17.0	7.0	8.2
Bihar	6.7	4.6	6.6	5.9	11.1	1.5	7.6	7.9	4.6	4.7	6.7	5.7	1.8	13.1	6.2	5.5
Gujarat	-2.2	-5.8	-2.8	-2.8	14.3	10.6	23.2	17.6	8.9	13.8	8.6	9.5	9.2	11.3	4.4	7.1
Haryana	8.3	7.1	8.8	8.6	4.6	12.6	6.8	6.8	9.6	11.0	9.0	9.6	13.3	15.7	4.4	10.7
Himachal Pradesh	3.7	9.2	10.0	8.5	14.6	1.0	7.2	8.2	12.4	11.2	9.1	10.0	0.4	17.7	4.5	4.3
Karnataka	7.7	5.9	10.9	8.9	5.6	-0.3	10.7	7.7	10.3	18.1	9.3	10.5	9.0	14.9	10.1	10.4
Kerala	1.6	12.0	5.4	4.7	17.2	10.6	12.7	14.0	6.3	11.4	8.3	7.9	7.4	23.3	6.1	9.8
Madhya Pradesh	5.6	5.8	11.5	8.6	9.9	6.2	11.6	10.0	5.1	8.7	7.0	6.6	1.6	13.8	4.6	5.3
Maharashtra	5.6	6.9	5.8	5.8	11.1	3.9	14.9	12.4	7.3	10.4	7.4	7.8	9.1	16.4	4.7	8.0
Orissa	4.3	19.7	10.0	7.3	-1.0	11.8	9.6	5.7	4.5	8.3	8.5	7.4	7.8	17.1	4.7	7.8
Punjab	3.8	9.4	6.9	5.8	-2.2	2.0	8.0	2.5	5.2	16.6	6.6	7.0	3.1	14.6	5.0	5.8
Rajasthan	10.3	10.6	10.3	10.1	10.2	4.4	12.6	10.9	7.9	12.2	8.7	8.8	5.7	12.1	6.8	7.1
Tamil Nadu	8.7	11.3	9.1	9.1	-5.6	-15.5	1.8	-3.9	7.9	12.2	8.7	8.8	5.7	12.1	6.8	7.1
Uttar Pradesh	3.1	6.1	8.6	5.9	4.7	6.1	10.4	7.6	3.7	7.4	5.5	5.1	2.1	14.1	5.9	6.0
West Bengal	7.4	6.2	4.9	5.6	4.4	10.8	8.3	7.4	8.9	7.2	10.6	9.7	9.6	11.1	10.6	10.4
All India	6.3	7.3	8.4	7.6	5.5	5.6	7.0	6.4	9.3	8.7	7.8	8.3	8.1	12.6	6.0	7.6

Source: Estimated using data from NAS

Note: S1-'Trade, commerce, restaurant etc'; S2-'Transport, storage, communication etc'; S3-'Other Services'.

Table: 3(A) NSDP Share of service Sub-Sectors in Different States

States	'Trade, commerce, restaurant etc'					'Transport, storage, communication etc'					'Financial intermediary, real estate etc'				
	1983	1987-88	1993-94	1999-00	2004-05	1983	1987-88	1993-94	1999-00	2004-05	1983	1987-88	1993-94	1999-00	2004-05
Andhra Pradesh	32.88	34.54	33.11	30.60	27.35	22.22	19.80	11.97	13.03	19.29	16.54	17.66	24.17	25.34	25.67
Bihar	32.10	32.58	38.68	36.28	30.34	16.80	15.73	10.81	10.21	14.44	14.99	16.13	14.23	18.79	20.01
Gujarat	34.38	35.93	29.57	28.60	31.49	22.02	19.75	13.34	16.88	20.46	17.23	17.84	34.25	29.73	26.75
Haryana	45.35	45.28	39.90	39.83	44.73	14.69	14.04	19.33	20.79	25.88	12.82	14.86	17.56	19.12	15.32
Himachal Pradesh	19.94	16.49	23.25	26.44	21.82	6.90	7.02	4.64	4.94	9.02	22.85	23.24	25.50	20.50	23.66
Karnataka	37.11	35.34	31.20	30.99	29.03	14.84	13.24	8.30	12.37	15.12	20.32	22.64	30.57	28.65	31.17
Kerala	38.11	33.64	39.62	36.21	32.54	10.95	14.27	11.87	14.32	25.59	13.19	14.49	21.40	23.44	19.15
Madhya Pradesh	37.80	34.07	33.46	30.63	25.59	18.04	16.38	13.11	14.76	21.70	11.88	16.25	24.18	23.20	25.26
Maharashtra	27.21	26.80	25.71	24.92	26.18	20.84	21.57	13.81	15.90	23.09	22.53	21.77	41.07	38.39	29.71
Orissa	49.82	43.10	28.65	24.35	24.35	7.26	10.90	15.05	15.80	23.87	10.91	12.01	24.90	22.94	23.04
Punjab	57.68	54.39	41.02	36.99	32.56	6.81	7.92	7.65	12.86	19.14	11.24	14.72	24.28	25.36	25.37
Rajasthan	37.40	37.35	36.48	34.67	32.42	14.78	14.91	10.54	12.65	15.82	17.71	17.29	23.96	22.20	22.32
Tamil Nadu	41.40	40.32	36.48	34.67	32.42	21.11	22.63	10.54	12.65	15.82	15.35	16.49	23.96	22.20	22.32
Uttar Pradesh	48.25	43.59	37.08	34.24	28.46	12.19	12.37	11.40	12.96	18.80	11.05	13.68	23.06	22.94	23.50
West Bengal	31.72	33.55	28.33	27.22	26.25	11.68	11.85	14.29	12.46	12.88	25.81	25.33	28.23	35.47	42.66
Coefficient of Variation	0.248	0.236	0.165	0.150	0.179	0.368	0.312	0.292	0.25	0.260	0.29227	0.22069	0.25202	0.22425	0.25028

Source: Estimated using data from NAS.

Note: Contents of the table continues in Table: 3(B) of Appendix.

Table: 3(B). NSDP Share of Service Sub-Sectors in Different States

States	'Public administration, defence, personal services etc'					'Other services' (adding 'Financial intermediary, real estate etc' and 'Public administration, defence, personal services etc')				
	1983	1987-88	1993-94	1999-00	2004-05	1983	1987-88	1993-94	1999-00	2004-05
Andhra Pradesh	28.35	28.01	30.75	31.03	27.69	44.90	45.66	54.92	56.37	53.36
Bihar	36.11	35.55	36.28	34.73	35.22	51.10	51.68	50.51	53.52	55.23
Gujarat	26.37	26.48	22.84	24.79	21.29	43.60	44.32	57.09	54.51	48.04
Haryana	27.14	25.82	23.21	20.26	14.06	39.96	40.69	40.77	39.38	29.39
Himachal Pradesh	50.30	53.25	46.61	48.13	45.50	73.16	76.49	72.11	68.62	69.16
Karnataka	27.72	28.78	29.93	28.00	24.68	48.05	51.42	60.50	56.64	55.86
Kerala	37.75	37.59	27.11	26.03	22.72	50.94	52.08	48.51	49.47	41.87
Madhya Pradesh	32.28	33.30	29.24	31.42	27.45	44.16	49.55	53.43	54.61	52.71
Maharashtra	29.43	29.86	19.41	20.78	21.02	51.95	51.63	60.48	59.18	50.73
Orissa	32.00	33.99	31.40	36.91	28.74	42.91	46.00	56.29	59.85	51.78
Punjab	24.28	22.97	27.05	24.79	22.93	35.52	37.69	51.33	50.14	48.30
Rajasthan	30.10	30.44	29.02	30.49	29.43	47.82	47.73	52.98	52.68	51.75
Tamil Nadu	22.14	20.55	29.02	30.49	29.43	37.49	37.04	52.98	52.68	51.75
Uttar Pradesh	28.51	30.36	28.47	29.86	29.25	39.56	44.04	51.53	52.80	52.74
West Bengal	30.79	29.27	29.16	24.85	18.21	56.60	54.60	57.39	60.32	60.87
Coefficient of Variation	0.21791	0.2452	0.21245	0.23604	0.28153	0.196	0.191	0.125	0.117	0.167

Source: Estimated using data from NAS.

Table: 4 Location Quotient of NSDP Share of Major States.

	1983	1987-88	1993-94	1999-00	2004-05	1983	1987-88	1993-94	1999-00	2004-05	1983	1987-88	1993-94	1999-00	2004-05
	Andhra Pradesh					Bihar					Gujarat				
Primary	1.15	1.03	1.05	1.04	1.08	1.28	1.29	1.32	1.36	1.58	1.09	1.34	0.74	0.65	0.77
Secondary	0.68	0.74	0.80	0.83	0.85	0.82	0.91	0.71	0.81	0.82	1.08	0.87	1.42	1.44	1.48
Service	1.01	1.13	1.07	1.07	1.02	0.75	0.73	0.89	0.86	0.79	0.83	0.71	0.99	1.00	0.90
	Haryana					Himachal Pradesh					Karnataka				
Primary	1.17	1.04	1.18	1.13	1.07	1.12	1.01	0.99	0.79	0.92	1.04	1.03	1.05	1.03	0.78
Secondary	0.84	1.07	1.09	1.05	1.06	0.81	0.92	1.08	1.30	1.49	0.92	0.91	1.03	0.95	1.06
Service	0.88	0.91	0.79	0.88	0.93	0.97	1.04	0.96	0.98	0.82	0.99	1.02	0.94	1.00	1.09
	Kerala					Madhya Pradesh					Maharashtra				
Primary	0.89	0.93	0.89	0.85	0.63	1.22	1.18	1.23	1.21	1.31	0.63	0.64	0.58	0.58	0.49
Secondary	1.11	0.99	0.87	0.79	0.80	0.87	0.89	0.89	1.04	1.02	1.47	1.46	1.33	1.19	1.10
Service	1.08	1.08	1.18	1.22	1.28	0.79	0.87	0.85	0.83	0.83	1.19	1.11	1.18	1.18	1.22
	Orissa					Punjab					Rajasthan				
Primary	1.25	1.21	1.34	1.31	1.48	1.07	1.17	1.33	1.39	1.48	1.28	1.00	1.02	1.03	1.12
Secondary	0.73	0.78	0.69	0.72	0.64	0.75	0.76	0.85	0.85	0.91	0.72	0.91	1.00	1.13	1.10
Service	0.85	0.90	0.88	0.94	0.92	1.07	0.96	0.79	0.82	0.79	0.81	1.05	0.98	0.91	0.89
	Tamil Nadu					Uttar Pradesh					West Bengal				
Primary	0.58	0.61	1.02	1.03	1.12	1.12	1.11	1.15	1.31	1.35	0.79	0.93	0.99	0.98	0.93
Secondary	1.50	1.27	1.00	1.13	1.10	0.81	0.89	0.83	0.77	0.86	1.09	0.95	0.91	0.86	0.79
Service	1.24	1.25	0.98	0.91	0.89	0.97	0.94	0.96	0.91	0.88	1.23	1.11	1.06	1.09	1.13

Source: Estimated using data from NAS.

Table: 5 Employment Growth Rates of Service Sub-Sectors in Different States

States	1983 to 1987-88				1987-88 to 1993-94				1993-94 to 1999-00				1999-00 to 2004-05			
	S ₁	S ₂	S ₃	Service Total	S ₁	S ₂	S ₃	Service Total	S ₁	S ₂	S ₃	Service Total	S ₁	S ₂	S ₃	Service Total
Andhra Pradesh	2.08	-0.23	1.57	1.51	2.71	2.70	3.92	3.29	2.96	4.24	0.27	1.86	6.26	9.19	2.29	5.04
Bihar	2.71	11.29	4.60	4.61	8.25	3.96	10.16	8.54	3.64	4.72	0.42	2.32	7.92	9.55	-0.55	4.92
Gujarat	16.44	12.98	6.45	10.77	3.87	4.45	7.28	5.61	9.46	7.05	-0.79	4.43	2.85	2.52	1.20	2.18
Haryana	14.35	7.48	3.14	7.43	5.35	16.73	10.66	9.59	10.36	0.85	-3.95	2.32	2.66	7.86	6.13	4.79
Himachal Pradesh	15.31	20.38	2.94	6.38	15.20	11.04	9.90	11.36	4.22	17.32	1.71	4.10	8.09	9.71	1.06	4.76
Karnataka	7.39	-3.12	-0.64	2.02	1.41	0.70	8.86	4.82	8.63	7.99	-1.45	3.77	3.43	6.84	4.40	4.32
Kerala	6.08	5.29	5.06	5.49	1.65	1.81	2.35	1.99	7.27	6.39	-0.42	3.99	-0.88	3.26	4.86	2.07
Madhya Pradesh	5.55	4.12	7.18	6.23	2.35	4.46	2.85	2.90	9.87	3.95	-0.11	4.17	5.43	2.78	5.66	5.19
Maharashtra	3.09	1.72	5.69	4.14	5.45	3.63	4.85	4.84	6.89	6.10	-0.88	3.12	3.36	2.36	4.89	3.81
Orissa	11.26	21.53	0.97	5.92	0.03	4.31	0.16	0.55	3.83	1.65	-2.56	0.56	8.09	12.00	6.47	7.96
Punjab	4.71	-0.80	3.29	2.98	6.00	-0.67	4.56	4.28	5.53	9.39	-2.45	2.64	3.91	1.77	5.08	3.96
Rajasthan	9.98	7.79	4.01	6.63	2.47	3.81	6.24	4.54	6.16	4.41	-1.52	2.20	5.87	4.00	4.87	5.13
Tamil Nadu	4.83	0.96	2.22	3.04	0.99	6.08	2.99	2.66	6.41	4.18	-1.37	2.63	2.42	2.22	4.91	3.36
Uttar Pradesh	2.54	1.12	0.56	1.34	4.37	4.82	3.15	3.82	6.73	5.31	-1.02	3.11	4.39	5.73	1.43	3.52
West Bengal	4.43	2.88	0.98	2.54	3.78	2.60	4.90	4.10	5.81	5.57	-2.10	2.38	2.83	3.01	4.33	3.42
All India	4.73	5.75	2.91	3.95	3.47	3.58	4.43	3.96	6.53	5.36	-0.51	3.11	4.00	5.05	3.36	3.91

Source: own calculation using NSSO data

Note: S1-'Trade, commerce, restaurant etc'; S2-'Transport, storage, communication etc'; S3-'Other Services'.

Table: 6(A) Employment Share of Service Sub-Sectors in Different States

States	S1					S2					S3				
	1983	1987-88	1993-94	1999-00	2004-05	1983	1987-88	1993-94	1999-00	2004-05	1983	1987-88	1993-94	1999-00	2004-05
Andhra Pradesh	38.0	38.8	37.5	40.0	42.4	14.5	13.5	13.1	15.0	18.2	47.5	47.6	49.4	44.9	39.4
Bihar	45.3	42.1	41.4	44.7	51.5	11.4	14.7	11.3	13.0	16.2	43.3	43.2	47.3	42.2	32.3
Gujarat	30.5	37.2	33.7	44.7	46.2	15.2	16.5	15.4	17.9	18.2	54.3	46.3	50.9	37.4	35.6
Haryana	30.6	39.3	31.0	48.9	44.1	11.6	11.6	16.9	15.5	17.9	57.8	49.1	52.0	35.6	38.0
Himachal Pradesh	17.2	23.8	29.2	29.4	34.4	4.8	7.8	7.7	15.7	19.8	78.0	68.4	63.2	54.9	45.9
Karnataka	35.2	43.2	35.4	46.6	44.7	17.5	14.2	11.2	14.2	16.0	47.3	42.5	53.4	39.2	39.3
Kerala	37.6	38.3	37.6	45.3	39.1	17.9	17.7	17.5	20.1	21.3	44.6	43.9	44.9	34.6	39.6
Madhya Pradesh	34.2	33.4	32.3	44.5	45.0	13.5	12.5	13.7	13.5	12.0	52.3	54.2	54.0	42.0	43.0
Maharashtra	33.3	32.0	33.1	41.1	40.2	18.2	16.6	15.5	18.4	17.1	48.5	51.4	51.4	40.6	42.7
Orissa	31.7	38.6	37.4	45.4	45.6	5.5	9.5	11.9	12.7	15.2	62.8	51.9	50.7	41.9	39.1
Punjab	32.3	34.5	38.0	44.9	44.8	20.0	17.2	12.9	18.9	17.0	47.7	48.3	49.1	36.2	38.2
Rajasthan	32.4	36.7	32.6	40.9	42.3	15.2	15.9	15.3	17.4	16.4	52.3	47.4	52.2	41.8	41.2
Tamil Nadu	37.1	39.7	36.0	44.8	42.8	14.0	12.9	15.7	17.1	16.2	48.9	47.4	48.3	38.1	41.0
Uttar Pradesh	35.1	36.8	38.0	46.7	48.7	12.8	12.7	13.4	15.2	16.9	52.2	50.5	48.6	38.1	34.4
West Bengal	34.8	37.4	36.7	44.8	43.5	16.9	17.2	15.7	18.9	18.5	48.3	45.4	47.5	36.3	38.0
CV	0.17	0.13	0.09	0.10	0.09	0.31	0.21	0.19	0.14	0.12	0.17	0.13	0.08	0.12	0.09

Source: own calculation using NSSO data

Note: S1-'Trade, commerce, restaurant etc'; S2-'Transport, storage, communication etc'; S3-'Other Services'

Contents of the table continues in Table: 6(B) of Appendix.

Table: 6(B) Employment Share of Service Sub-Sectors in Different States

States	S3.1			S3.2		
	1993-94	1999-00	2004-05	1993-94	1999-00	2004-05
Andhra Pradesh	4.0	4.7	5.5	45.4	40.3	33.8
Bihar	2.5	3.7	4.5	44.7	38.6	27.8
Gujarat	4.2	5.3	5.9	46.7	32.1	29.7
Haryana	2.6	4.2	6.3	49.5	31.4	31.7
Himachal Pradesh	2.9	4.5	3.5	60.2	50.4	42.3
Karnataka	6.2	7.5	8.7	47.2	31.7	30.6
Kerala	5.4	7.0	8.8	39.5	27.6	30.8
Madhya Pradesh	3.8	3.5	4.9	50.2	38.5	38.1
Maharashtra	7.7	8.0	10.4	43.8	32.6	32.3
Orissa	2.0	3.3	5.7	48.7	38.7	33.4
Punjab	3.9	4.5	6.1	45.2	31.7	32.1
Rajasthan	4.9	5.5	6.4	47.3	36.2	34.8
Tamil Nadu	6.1	6.6	10.7	42.2	31.5	30.3
Uttar Pradesh	4.0	3.7	4.9	44.6	34.4	29.5
West Bengal	4.7	4.8	7.0	42.8	31.6	30.9
CV	0.37	0.29	0.32	0.10	0.16	0.11

Source: own calculation using NSSO data

Note: S3.1- 'Financial intermediary, real estate etc';

S3.2- 'Public administration, defence, personal services etc'

Table:7 Employment Growth rates of major sectors in different states

States	1983 to 1987-88				1987-88 to 1993-94				1993-94 to 1999-00				1999-00 to 2004-05			
	Primary	Secondary	Tertiary	Total	Primary	Secondary	Tertiary	Total	Primary	Secondary	Tertiary	Total	Primary	Secondary	Tertiary	Total
Andhra Pradesh	0.62	4.01	1.51	1.24	3.70	1.46	3.29	3.32	0.22	0.53	1.86	0.60	-0.20	6.54	5.04	1.93
Bihar	8.45	4.39	4.61	7.36	9.03	3.27	8.54	8.45	1.22	7.97	2.32	1.97	0.16	6.77	4.92	1.76
Gujarat	-0.01	19.82	10.77	6.22	7.41	2.40	5.61	5.76	3.50	-0.57	4.43	2.90	0.64	7.16	2.18	2.30
Haryana	6.82	13.27	7.43	8.06	3.21	5.40	9.59	5.56	1.56	5.16	2.32	2.53	3.55	9.79	4.79	5.43
Himachal Pradesh	2.17	21.11	6.38	4.23	4.60	7.73	11.36	5.89	-2.57	5.86	4.10	-0.08	4.04	6.26	4.76	4.62
Karnataka	0.20	1.80	2.02	0.76	2.09	1.98	4.82	2.60	1.75	2.20	3.77	2.25	2.29	2.78	4.32	2.83
Kerala	-0.27	2.22	5.49	2.00	1.76	2.72	1.99	2.05	-3.18	4.25	3.99	1.15	0.12	0.95	2.07	1.11
Madhya Pradesh	-0.55	5.80	6.23	0.86	2.34	-2.50	2.90	1.96	1.31	5.59	4.17	2.11	1.17	7.53	5.19	2.54
Maharashtra	-0.15	0.79	4.14	0.90	1.93	2.00	4.84	2.64	0.80	1.90	3.12	1.59	2.00	5.31	3.81	3.07
Orissa	-0.51	1.49	5.92	0.75	2.78	-2.67	0.55	1.74	0.31	5.32	0.56	0.92	-0.53	9.17	7.96	2.47
Punjab	0.34	4.58	2.98	1.85	0.37	0.52	4.28	1.59	-0.40	4.67	2.64	1.65	-1.63	7.56	3.96	2.63
Rajasthan	-0.77	12.92	6.63	2.45	2.27	-2.81	4.54	1.69	0.71	3.31	2.20	1.40	0.70	6.11	5.13	2.57
Tamil Nadu	0.19	4.62	3.04	1.82	1.24	1.11	2.66	1.56	-0.99	2.15	2.63	0.73	-0.56	4.23	3.36	1.84
Uttar Pradesh	2.93	0.56	1.34	2.34	0.98	2.57	3.82	1.72	-0.37	5.52	3.11	1.22	1.27	7.17	3.52	2.84
West Bengal	2.83	4.38	2.54	3.06	0.42	4.37	4.10	2.34	2.53	0.79	2.38	2.09	1.36	1.88	3.42	2.13
All India	0.65	4.79	3.95	1.92	2.32	1.36	3.96	2.52	0.66	2.86	3.11	1.57	0.97	5.73	3.91	2.53

Source: Estimated using data from NSSO.

Table: 8 Location Quotient of Employment

Year	1983	1987-88	1993-94	1999-00	2004-05	1983	1987-88	1993-94	1999-00	2004-05	1983	1987-88	1993-94	1999-00	2004-05
	Andhra Pradesh					Bihar					Gujarat				
Primary	1.02	1.04	1.07	1.10	1.07	1.08	1.17	1.21	1.22	1.22	0.97	0.79	0.87	0.95	0.95
Secondary	0.85	0.87	0.84	0.77	0.83	0.75	0.61	0.49	0.63	0.69	1.12	1.65	1.47	1.10	1.19
Service	1.03	0.98	0.91	0.91	0.98	0.94	0.80	0.74	0.70	0.76	1.02	1.14	1.05	1.06	0.97
	Haryana					Himachal					Karnataka				
Primary	0.85	0.85	0.74	0.74	0.73	1.25	1.20	1.12	1.02	1.07	1.03	1.05	1.02	1.05	1.10
Secondary	1.05	1.16	1.24	1.33	1.40	0.45	0.75	0.90	1.17	1.08	0.99	0.94	0.98	0.89	0.77
Service	1.47	1.36	1.58	1.44	1.29	0.56	0.57	0.72	0.85	0.79	0.90	0.90	0.95	0.95	0.95
	Kerala					Madhya Pradesh					Maharashtra				
Primary	0.76	0.72	0.71	0.58	0.59	1.22	1.20	1.23	1.23	1.25	0.96	0.96	0.93	0.93	0.96
Secondary	1.46	1.34	1.50	1.66	1.41	0.58	0.64	0.53	0.60	0.65	1.12	1.01	1.05	0.99	0.94
Service	1.49	1.61	1.49	1.62	1.58	0.58	0.67	0.66	0.69	0.72	1.03	1.11	1.17	1.18	1.13
	Orissa					Punjab					Rajasthan				
Primary	1.10	1.09	1.16	1.18	1.10	0.83	0.82	0.76	0.71	0.62	1.11	1.02	1.06	1.07	1.06
Secondary	0.89	0.83	0.69	0.82	0.96	1.20	1.22	1.23	1.35	1.47	0.95	1.28	1.05	1.08	1.10
Service	0.75	0.86	0.75	0.68	0.81	1.41	1.40	1.52	1.49	1.47	0.65	0.72	0.79	0.77	0.81
	Tamil Nadu					Uttar Pradesh					West Bengal				
Primary	0.85	0.83	0.82	0.78	0.74	1.03	1.10	1.06	1.01	1.01	0.79	0.81	0.73	0.79	0.82
Secondary	1.43	1.45	1.53	1.53	1.47	0.88	0.75	0.85	1.00	1.06	1.34	1.28	1.56	1.33	1.13
Service	1.19	1.18	1.17	1.21	1.20	0.99	0.90	0.94	0.97	0.93	1.47	1.36	1.40	1.31	1.30

Source: Estimated using NSSO data.

Table: 9 Employment Elasticity in Major Sectors

States	1983 to 1987-88				1987-88 to 1993-94				1993-94 to 1999-00				1999-00 to 2004-05			
	Primary	Secondary	Tertiary	Total	Primary	Secondary	Tertiary	Total	Primary	Secondary	Tertiary	Total	Primary	Secondary	Tertiary	Total
Andhra Pradesh	-0.4	0.6	0.2	0.4	0.6	0.1	0.4	0.4	0.1	0.1	0.3	0.1	0.0	1.0	0.6	0.3
Bihar	4.4	0.6	0.8	1.8	6.0	-4.2	1.1	2.8	0.6	1.0	0.4	0.4	0.0	1.7	0.9	0.4
Gujarat	0.0	-3.6	-3.9	-4.7	-3.2	0.1	0.3	0.6	1.7	-0.1	0.5	0.4	0.1	1.1	0.3	0.3
Haryana	-9.5	1.1	0.9	1.7	0.4	0.6	1.4	0.7	0.8	0.9	0.2	0.4	1.3	1.6	0.4	0.8
Himachal Pradesh	-2.0	2.6	0.8	1.1	0.8	0.7	1.4	0.7	-4.4	0.5	0.4	0.0	0.7	0.8	1.1	0.8
Karnataka	0.1	0.3	0.2	0.1	0.3	0.2	0.6	0.3	0.4	0.3	0.4	0.3	-0.8	0.4	0.4	0.5
Kerala	-0.2	7.1	1.2	0.9	0.2	0.3	0.1	0.2	-1.9	0.9	0.5	0.2	0.0	0.2	0.2	0.2
Madhya Pradesh	-1.7	1.1	0.7	0.2	0.3	-0.3	0.3	0.2	0.7	0.6	0.6	0.4	0.8	4.7	1.0	0.9
Maharashtra	-0.1	0.1	0.7	0.2	0.3	0.2	0.4	0.3	0.3	0.4	0.4	0.3	-1.1	2.4	0.5	0.6
Orissa	-5.8	0.2	0.8	0.2	0.6	-0.9	0.1	0.4	0.4	0.9	0.1	0.2	-0.1	3.6	1.0	0.4
Punjab	0.1	0.6	0.5	0.3	0.1	0.1	1.7	0.4	-0.2	0.9	0.4	0.4	-0.7	1.6	0.7	0.6
Rajasthan	0.1	1.6	0.7	3.9	0.2	-0.2	0.4	0.2	0.1	0.3	0.2	0.2	0.2	1.7	0.7	0.5
Tamil Nadu	0.0	1.6	0.3	0.3	0.2	-0.2	-0.7	-1.2	-0.2	0.2	0.3	0.1	-0.1	1.2	0.5	0.4
Uttar Pradesh	1.9	0.1	0.2	0.6	0.2	0.5	0.5	0.3	-0.1	1.4	0.6	0.3	0.8	1.4	0.6	0.7
West Bengal	0.4	1.4	0.5	0.5	0.1	0.7	0.6	0.4	0.6	0.1	0.2	0.3	0.5	0.4	0.3	0.3
All India	0.4	0.8	0.5	0.4	0.5	0.2	0.6	0.4	0.2	0.4	0.4	0.2	0.5	0.8	0.5	0.4

Source: Estimated using NAS and NSSO data.

Table: 10 Employment Elasticity Service Sub-sectors

States	1983 to 1987-88			1987-88 to 1993-94			1993-94 to 1999-00					1999-00 to 2004-05				
	S ₁	S ₂	S ₃	S ₁	S ₂	S ₃	S ₁	S ₂	S ₃	S3.1	S3.2	S ₁	S ₂	S ₃	S3.1	S3.2
Andhra Pradesh	0.21	-0.04	0.18	0.35	-10.32	0.33	0.50	0.48	0.03	0.58	-0.02	1.08	0.54	0.33	1.02	0.25
Bihar	0.40	2.48	0.70	0.74	2.72	1.34	0.79	1.00	0.06	0.83	-0.04	4.38	0.73	-0.09	1.35	-0.30
Gujarat	-7.64	-2.23	-2.29	0.27	0.42	0.31	1.07	0.51	-0.09	1.24	-0.17	0.31	0.22	0.27	0.91	0.16
Haryana	1.73	1.05	0.36	1.18	1.33	1.56	1.08	0.08	-0.44	0.97	-0.71	0.20	0.50	1.39	2.33	1.69
Himachal Pradesh	4.14	2.22	0.29	1.04	10.83	1.38	0.34	1.55	0.19	1.95	0.10	21.64	0.55	0.24	-0.04	0.37
Karnataka	0.96	-0.52	-0.06	0.25	-2.39	0.82	0.84	0.44	-0.16	0.77	-0.31	0.38	0.46	0.44	0.61	0.47
Kerala	3.79	0.44	0.94	0.10	0.17	0.19	1.15	0.56	-0.05	0.89	-0.28	-0.12	0.14	0.79	1.25	0.64
Madhya Pradesh	1.00	0.72	0.62	0.24	0.72	0.25	1.95	0.45	-0.02	0.46	-0.04	3.37	0.20	1.24	1.76	1.96
Maharashtra	0.55	0.25	0.97	0.49	0.93	0.33	0.95	0.59	-0.12	0.58	-0.20	0.37	0.14	1.03	3.62	0.44
Orissa	2.62	1.09	0.10	-0.03	0.37	0.02	0.85	0.20	-0.30	1.55	-0.31	1.04	0.70	1.38	2.60	1.94
Punjab	1.25	-0.09	0.48	-2.77	-0.34	0.57	1.07	0.56	-0.37	0.67	-0.60	1.24	0.12	1.01	1.81	1.01
Rajasthan	0.97	0.74	0.39	0.24	0.86	0.50	0.78	0.36	-0.17	0.57	-0.23	1.03	0.33	0.72	1.17	0.67
Tamil Nadu	0.55	0.08	0.24	-0.18	-0.39	1.62	0.81	0.34	-0.16	0.51	-0.23	0.42	0.18	0.73	1.93	0.40
Uttar Pradesh	0.82	0.18	0.07	0.93	0.79	0.30	1.82	0.72	-0.18	0.29	-0.21	2.07	0.40	0.24	1.48	0.07
West Bengal	0.60	0.46	0.20	0.87	0.24	0.59	0.65	0.77	-0.20	0.19	-0.40	0.29	0.27	0.41	0.81	0.80
All India	0.75	0.78	0.34	0.63	0.64	0.63	0.70	0.62	-0.07	0.67	-0.15	0.50	0.40	0.56	1.45	0.43

Source: Own calculation using NAS and NSSO data.

Note: S1-'Trade, commerce, restaurant etc'; S2-'Transport, storage, communication etc'; S3-'Other Services'; S3.1- 'Financial intermediary, real estate etc'; S3.2-'Public administration, defence, personal services etc'.

Table: 11 List of Service Sub-sectors according to NIC-2 digit classification

NIC	Sectors
50:	Sale, Maintenance and Repair of Motor Vehicles etc
51:	Wholesale Trade etc
52:	Retail Trade
55:	Hotels and Restaurants
60:	Land Transport and Transport via pipelines
61:	Water Transport
62:	Air Transport
63:	Supporting & Auxiliary Transport activities etc
64:	Post & Telecommunications
65:	Financial Intermediation except insurance
66:	Insurance & Pension Funding except compulsory social security
67:	Activities auxiliary to financial intermediation
70:	Real estate activities
71:	Renting of machinery & equipment etc
72:	Computer & related activities
73:	Research & Development
74:	Other business activities
75:	Public administration & Defence
80:	Education
85:	Health & Social work
90:	Sewage & Refuse Disposal, Sanitation & similar activities
91:	Activities of membership Organisation
92:	Recreational, cultural & sporting activities
93:	Other service activities
95:	Private households with employed persons
99:	Extra territorial organizations and bodies

Source: NIC 1998

Table 12: Share of Workers in Service Sub-Sectors (2004-05) (percent)

NIC code and details	Share of service sector employment across 26 sub-sectors	Share of service sector employment across 26 sub-sectors in informal and formal sectors	
		Informal	Formal
50) Sale, Maintenance and Repair of Motor Vehicles etc	2.4	90.4	9.6
51) Wholesale Trade etc	4.8	89.1	10.9
52) Retail Trade	31.4	98.4	1.6
55) Hotels and Restaurants	5.3	88.2	11.8
60) Land Transport and Transport via pipelines	14.4	86.3	13.7
61) Water Transport	.1	40.0	60.0
62) Air Transport	.1	4.5	95.5
63) Supporting & Auxiliary Transport activities etc	.5	57.6	42.4
64) Post & Telecommunications	1.7	60.3	39.7
65) Financial Intermediation except insurance	2.0	37.6	62.4
66) Insurance & Pension Funding except compulsory social security	.5	45.1	54.9
67) Activities auxiliary to financial intermediation	.2	60.7	39.3
70) Real estate activities	.4	95.6	4.4
71) Renting of machinery & equipment etc	.5	96.8	3.2
72) Computer & related activities	.8	41.4	58.6
73) R&D	.027	15.6	84.4
74) Other business activities	2.3	79.8	20.2
75) Public administration & Defence	7.9	20.7	79.3
80) Education	9.9	56.3	43.7
85) Health & Social work	3.3	62.3	37.7
90) Sewage & Refuse Disposal, Sanitation & similar activities	.3	86.8	13.2
91) Activities of membership Organisation	1.2	88.7	11.3
92) Recreational, cultural & sporting activities	.9	72.8	27.2
93) Other service activities	5.0	99.3	.7
95) Private households with employed persons	4.1	99.2	.8
99) Extra territorial organizations and bodies	.002	94.4	5.6
Total service sector	100	81.7	18.3

Source: Estimated using NSSO 61st round data.

Table: 13 Distribution of Indicators of Job Security in Each Industry(2004-05) (percent)

NIC code and details	Status of Workers			Enterprise Type				Type of Contract		
	Self Employed	Regular	Casual	Proprietary	Partnership	Public sector and Public/priv	Others	No written contract	Contract < 1 year	Contract > 1 year
50) Sale, Maintenance and Repair of Motor Vehicles etc	44.3	40.0	15.7	89.4	6.1	3.2	1.3	93.6	1.2	5.2
51) Wholesale Trade etc	63.6	22.9	13.5	83.3	10.3	3.4	3.1	88.1	1.7	10.3
52) Retail Trade	82.8	14.1	3.0	94.2	3.6	1.1	1.1	92.8	1.2	6.1
55) Hotels and Restuarants	61.4	26.7	11.9	89.4	6.3	2.9	1.3	88.7	.7	10.5
60) Land Transport and Transport via pipelines	46.5	36.3	17.3	82.0	2.0	13.4	2.6	80.6	.7	18.7
61) Water Transport	26.6	58.4	15.0	47.0	7.7	43.9	1.3	44.0	8.4	47.6
62) Air Transport	-	94.8	5.2	-	3.8	96.2	-	33.5	-	66.5
63) Supporting & Auxiliary Transport activities etc	23.1	53.3	23.6	54.9	10.0	34.0	1.1	64.0	2.7	33.3
64) Post & Telecommunications	28.2	68.2	3.7	44.6	2.8	51.6	1.0	44.7	3.8	51.5
65) Financial Intermediation except insurance	13.8	84.9	1.2	17.8	2.6	62.9	16.7	30.9	4.0	65.1
66) Insurance & Pension Funding except compulsory social security	52.6	46.2	1.2	39.7	.1	58.4	1.9	25.6	2.1	72.3
67) Activities auxiliary to financial intermediation	47.7	50.9	1.4	53.9	15.5	29.3	1.4	34.4	29.3	36.2
70) Real estate activities	65.8	34.0	.2	92.3	3.3	2.2	2.1	91.1	.6	8.3
71) Renting of machinery & equipment etc	68.1	13.8	18.1	98.1	.9	.5	.5	97.3	.6	2.1
72) Computer & related activities	20.2	79.2	.6	44.2	7.7	47.2	.9	42.1	10.5	47.4
73) R&D	-	93.8	6.2	1.7	-	77.1	21.2	18.3	1.8	79.9
74) Other business activities	56.4	39.6	4.0	73.4	8.2	16.0	2.3	70.3	3.7	26.0
75) Public administration & Defence	.5	97.8	1.7	-	-	98.6	1.4	26.1	1.9	71.9
80) Education	11.4	87.8	.8	25.0	3.1	59.1	12.8	35.5	2.8	61.7
85) Health & Social work	29.6	68.0	2.4	48.1	3.6	39.3	9.0	46.0	2.2	51.8
90) Sewage & Refuse Disposal, Sanitation & similar activities	36.0	43.1	20.9	75.7	.1	18.2	6.1	82.4	1.0	16.6
91) Activities of membership Organisation	54.0	43.4	2.7	50.4	2.2	2.6	44.8	79.9	.2	19.9
92) Recreational, cultural & sporting activities	53.1	39.7	7.3	72.7	10.6	11.5	5.2	71.2	1.3	27.5
93) Other service activities	87.8	3.7	8.5	96.2	1.9	.0	1.9	98.2	1.0	.7
95) Private households with employed persons	-	71.1	28.9	-	-	-	100	97.4	.7	1.9
99) Extra territorial organizations and bodies	-	95.3	4.7	-	-	9.4	90.6	94.9	-	5.1
Total service sector	51.1	41.3	7.6	67.1	3.5	21.5	7.9	61.9	1.9	36.1

Source: Estimated using NSSO 61st round data.

Table 14: Distribution of Workers in Each Indicator According to Industry (2004-05) (percent)

NIC code and details	Enterprise Type				Status of worker			type of contract		
	1	2	3	4	5	6	7	8	9	10
50) Sale, Maintenance and Repair of Motor Vehicles etc	3.2	4.2	.4	.4	2.1	2.3	4.9	4.1	1.6	.4
51) Wholesale Trade etc	6.0	14.2	.8	1.9	5.9	2.6	8.5	5.1	3.1	1.0
52) Retail Trade	43.6	31.8	1.6	4.4	50.8	10.7	12.6	16.4	6.5	1.8
55) Hotels and Restaurants	7.2	9.8	.7	.9	6.4	3.5	8.3	6.0	1.6	1.2
60) Land Transport and Transport via pipelines	17.6	8.1	9.0	4.8	13.1	12.6	32.8	20.5	5.9	8.1
61) Water Transport	.1	.2	.2	.0	.0	.1	.2	.1	.6	.2
62) Air Transport	-	.1	.3	-	-	.2	.0	.1	-	.3
63) Supporting & Auxiliary Transport activities etc	.4	1.4	.7	.1	.2	.6	1.5	.8	1.0	.7
64) Post & Telecommunications	1.2	1.4	4.2	.2	1.0	2.9	.8	1.9	5.1	3.7
65) Financial Intermediation except insurance	.5	1.5	5.9	4.2	.5	4.1	.3	1.8	7.3	6.4
66) Insurance & Pension Funding except compulsory social security	.3	.0	1.4	.1	.5	.6	.1	.2	.5	1.0
67) Activities auxiliary to financial intermediation	.2	.9	.3	.0	.2	.2	.0	.1	3.3	.2
70) Real estate activities	.6	.4	.0	.1	.6	.4	.0	.4	.1	.1
71) Renting of machinery & equipment etc	.7	.1	.0	.0	.7	.2	1.2	.5	.1	.0
72) Computer & related activities	.5	1.7	1.7	.1	.3	1.5	.1	.9	6.8	1.6
73) Research & Development	.0	-	.1	.1	-	.1	.0	.0	.1	.1
74) Other business activities	2.5	5.5	1.7	.7	2.5	2.2	1.2	2.3	3.9	1.5
75) Public administration & Defence	-	-	36.5	1.4	.1	18.8	1.8	6.8	16.2	32.3
80) Education	3.7	8.9	27.3	16.0	2.2	21.0	1.1	10.3	26.2	30.5
85) Health & Social work	2.4	3.5	6.1	3.8	1.9	5.5	1.1	3.6	5.5	6.9
90) Sewage & Refuse Disposal, Sanitation & similar activities	.4	.0	.3	.3	.2	.4	.9	.6	.2	.2
91) Activities of membership Organisation	.9	.8	.1	6.6	1.2	1.2	.4	1.4	.1	.6
92) Recreational, cultural & sporting activities	1.0	2.9	.5	.6	1.0	.9	.9	1.0	.6	.7
93) Other service activities	7.0	2.6	.0	1.2	8.6	.4	5.6	1.9	.6	.0
95) Private households with employed persons	-	-	-	52.1	-	7.1	15.7	13.2	3.1	.4
99) Extra territorial organizations and bodies	-	-	.0	.0	-	.0	.0	.0	-	.0
Total service sector	100	100	100	100	100	100	100	100	100	100

Source: Estimated using NSSO 61st round data.

Note: 1- No fixed place (including street without fixed place); 2-Own dwelling, street with fixed location, construction site; 3- Own enter but outside dwelling, employer's dwelling, employer's enter but outside dwelling; 4- Other type of enterprises; 5-Self Employed; 6-Regular; 7-Casual; 8-No written contract; 9-Written contract, less than one year; 10-Written, more than one year.

Table 15: Distribution of Indicators of Income Security Across Industries(2004-05) (percent)

NIC code and details	Method of payment			Wage:
	Regular	Daily	Others	Average Wage per day
50)Sale, Maintenance and Repair of Motor Vehicles etc	70.9	19.6	9.5	70.97
51)Wholesale Trade etc	68.0	23.7	8.3	93.87
52)Retail Trade	87.2	9.3	3.5	70.84
55)Hotels and Restuarants	76.4	19.3	4.3	87.02
60)Land Transport and Transport via pipelines	72.3	19.0	8.7	118.89
61)Water Transport	79.2	10.5	10.3	252.45
62)Air Transport	92.3	-	7.7	542.93
63)Supporting & Auxiliary Transport activities etc	76.8	18.7	4.5	206.92
64)Post & Telecommunications	96.1	1.9	2.0	210.133
65)Financial Intermediation except insurance	97.7	.3	2.0	324.81
66)Insurance & Pension Funding except compulsory social security	95.9	-	4.1	566.208
67)Activities auxiliary to financial intermediation	100	-	-	327.39
70)Real estate activities	100	-	-	77.25
71)Renting of machinery & equipment etc	53.6	30.8	15.7	65.20
72)Computer & related activities	99.6	-	.4	366.05
73)R&D	93.9	6.1	-	496.59
74)Other business activities	90.6	3.4	6.0	182.23
75)Public administration & Defence	98.3	.6	1.1	237.56
80)Education	98.3	.3	1.4	204.21
85)Health & Social work	97.8	1.0	1.3	177.30
90)Sewage & Refuse Disposal, Sanitation & similar activities	63.7	10.6	25.8	86.22
91)Activities of membership Organisation	90.4	3.2	6.4	85.40
92)Recreational, cultural & sporting activities	81.0	12.8	6.2	120.55
93)Other service activities	32.3	43.1	24.5	46.84
95)Private households with employed persons	79.8	12.4	7.8	46.74
99)Extra territorial organizations and bodies	95.3	4.7	-	79.07
Total service sector	86.9	8.5	4.5	157.62

Source: Estimated using NSSO 61st round data.

Table: 16 Distribution of Indicators of Conditions of Work Across Industries (2004-05) (percent)

NIC code and details	Social Security Benefits				Location Of Workspace			
	1	2	3	4	5	6	7	8
50)Sale, Maintenance and Repair of Motor Vehicles etc	2.5	1.2	2.5	93.8	1.0	5.8	92.7	.6
51)Wholesale Trade etc	3.5	3.3	1.3	91.9	14.0	13.4	67.9	4.8
52)Retail Trade	2.9	1.1	1.5	94.5	17.9	23.2	57.1	1.8
55)Hotels and Restaurants	5.0	2.7	3.4	88.9	5.6	23.8	69.4	1.2
60)Land Transport and Transport via pipelines	5.3	2.3	15.6	76.8	38.6	14.8	36.6	10.0
61)Water Transport	15.5	7.1	34.9	42.5	7.3	1.1	60.8	30.8
62)Air Transport	5.6	14.2	74.1	6.1	-	-	90.9	9.1
63)Supporting & Auxiliary Transport activities etc	10.6	7.4	19.8	62.1	2.2	8.3	83.0	6.5
64)Post & Telecommunications	13.2	6.6	40.6	39.6	.9	10.4	83.4	5.3
65)Financial Intermediation except insurance	13.2	10.3	50.8	25.7	2.0	5.4	89.3	3.3
66)Insurance & Pension Funding except compulsory social security	19.7	3.6	64.8	11.9	14.8	20.1	58.8	6.3
67)Activities auxiliary to financial intermediation	2.4	20.4	21.0	56.2	3.7	19.5	74.4	2.4
70)Real estate activities	2.1	1.8	6.0	90.2	8.6	23.2	64.3	3.9
71)Renting of machinery & equipment etc	1.3	-	4.4	94.4	12.6	25.0	58.9	3.4
72)Computer & related activities	15.1	15.0	29.5	40.5	.2	3.0	91.9	4.9
73)R&D	2.4	10.1	58.1	29.4	-	-	95.9	4.1
74)Other business activities	9.5	10.5	11.2	68.9	4.5	12.4	75.0	8.0
75)Public administration & Defence	17.2	7.8	61.8	13.2	1.5	2.7	89.7	6.0
80)Education	15.6	7.8	41.5	35.1	1.0	8.5	85.1	5.3
85)Health & Social work	16.6	6.7	35.2	41.5	2.7	11.1	83.0	3.2
90)Sewage & Refuse Disposal, Sanitation & similar activities	11.3	5.0	6.9	76.7	34.7	32.8	29.0	3.5
91)Activities of membership Organisation	6.4	3.7	5.8	84.1	17.7	14.7	51.4	16.2
92)Recreational, cultural & sporting activities	5.5	6.8	15.6	72.1	19.9	9.2	61.8	9.1
93)Other service activities	.2	.1	.2	99.5	15.7	33.1	43.6	7.6
95)Private households with employed persons	.9	.2	.2	98.7	.9	.4	97.9	.7
99)Extra territorial organizations and bodies	5.1	-	4.3	90.6	-	-	95.7	4.3
Total service sector	9.6	5.0	26.4	59.0	14.1	15.9	65.4	4.6

Source: Estimated using NSSO 61st round data.

Note: 1-Any one of the benefit in the list; 2-Any one of combination of two as given in schedule; 3-All benefits given in the list; 4-Not eligible for any; 5-No fixed place (including street without fixed work place); 6-Own dwelling, street with fixed location construction site; 7-Own enter but outside dwelling, employer's dwelling, employer's enter but outside dwelling; 8-Others

Table: 17 Sectors Ranked According to the Quality Indices

NIC code and details	Total		Self Employed						Wage Employed							
	Total Index		Job Security		Conditions of Work		Total		Job Security		Income Security		Conditions of Work		Total	
	value	rank	value	rank	value	rank	value	rank	value	rank	value	rank	value	rank	value	rank
62.'Air transport'	0.04	1	-	-	-	-	-	-	0.10	4	0.02	2	0.00	1	0.04	2
73.'R&D'	0.10	2	-	-	-	-	-	-	0.01	1	0.14	3	0.13	4	0.10	3
75.'Public administration & defence'	0.15	3	0.00	1	0.00	1	0.00	1	0.05	2	0.32	7	0.10	3	0.15	4
65.'Financial intermediation except insurance'	0.23	4	0.70	2	0.50	5	0.56	3	0.13	5	0.24	6	0.16	5	0.18	5
72.'Computer & related activities'	0.31	5	0.91	9	0.48	4	0.63	5	0.32	9	0.19	4	0.19	6	0.23	6
80.'Education'	0.32	6	0.91	10	0.52	7	0.65	9	0.19	6	0.35	8	0.27	8	0.27	8
66.'Insurance & pension funding except compulsory social security'	0.35	7	0.73	3	0.59	13	0.64	6	0.06	3	0.00	1	0.02	2	0.03	1
61.'Water transport'	0.39	8	0.84	4	0.41	2	0.55	2	0.34	11	0.42	12	0.27	9	0.33	11
64.'Post & telecommunication'	0.40	9	0.93	13	0.47	3	0.62	4	0.30	8	0.36	9	0.27	10	0.31	9
85.'Health & social work'	0.43	10	0.96	18	0.53	9	0.67	11	0.32	10	0.39	10	0.29	11	0.33	10
67.'Activities auxiliary to financial intermediation'	0.45	11	0.93	14	0.56	12	0.69	13	0.20	7	0.23	5	0.25	7	0.23	7
63.'Supporting & auxiliary transport activities etc'	0.51	12	0.91	11	0.53	10	0.66	10	0.51	15	0.56	16	0.35	12	0.46	12
99.'Extra territorial organisations and bodies'	0.55	13	-	-	-	-	-	-	0.48	13	0.52	15	0.62	20	0.55	16
74.'Other business activities'	0.57	14	0.89	7	0.52	8	0.64	7	0.61	16	0.41	11	0.42	13	0.47	13
95.'Private households with employed persons'	0.61	15	-	-	-	-	-	-	0.49	14	0.64	20	0.67	22	0.61	17
92.'Recreational, cultural & sporting activities'	0.66	16	0.88	6	0.69	19	0.75	18	0.63	17	0.58	17	0.48	14	0.55	15
91.'Activities of membership organisation'	0.66	17	0.85	5	0.74	20	0.78	19	0.45	12	0.50	14	0.59	17	0.52	14
55.'Hotels & restaurants'	0.68	18	0.95	15	0.55	11	0.68	12	0.87	21	0.69	22	0.56	15	0.68	19
50.'Sale, maintenance & repair of motor vehicles etc'	0.69	19	0.92	12	0.50	6	0.64	8	0.93	24	0.70	23	0.60	18	0.72	22
70.'Real estate activities'	0.69	20	0.96	17	0.59	14	0.71	14	0.91	22	0.47	13	0.61	19	0.66	18
51.'Wholesale trade etc'	0.72	21	0.90	8	0.66	17	0.74	15	0.82	20	0.73	24	0.58	16	0.69	20
52.'Retail trade'	0.77	22	0.97	19	0.69	18	0.78	20	0.92	23	0.58	18	0.66	21	0.71	21
93.'Other service activities'	0.77	23	0.98	21	0.63	16	0.75	17	0.95	25	1.00	26	0.92	26	0.95	26
71.'Renting of machinery & equipment etc'	0.77	24	1.00	22	0.61	15	0.74	16	0.99	26	0.84	25	0.74	23	0.84	25
90.'Sewage & refusal disposal, sanitation & similar activities'	0.80	25	0.96	16	0.86	21	0.89	21	0.74	18	0.58	19	0.85	25	0.74	24
60.'Land transport & transport via pipelines'	0.85	26	0.98	20	0.99	22	0.99	22	0.75	19	0.65	21	0.76	24	0.72	23

Source: Estimated using NSSO 61st round data.

Table: 18 Percentage of Workers in Each Group(2004-05) (in percent)

NIC code and details	Total workers		self employed only			wage employed only						
	Self Employed	Wage Employed	1	2	3	1	4	5	6	2	7	3
50)Sale, Maintenance and Repair of Motor Vehicles etc	44.3	55.7	91.2	1.4	98.8	87.9	93.6	19.6	70.97	0.6	93.8	83
51)Wholesale Trade etc	63.6	36.4	88.5	20.2	98	74.3	88.1	23.7	93.87	3.2	91.9	72.3
52)Retail Trade	82.8	17.2	95.7	21.1	99.7	87.3	92.8	9.3	70.84	2.7	94.5	92.5
55)Hotels and Restaurants	61.4	38.6	93.8	7.9	97.4	82.5	88.7	19.3	87.02	2	88.9	73.1
60)Land Transport and Transport via pipelines	46.5	53.5	96.7	56.3	99	69.2	80.6	19	118.89	23.3	76.8	74
61)Water Transport	26.6	73.4	82.7	6.6	82.2	33.8	44	10.5	252.45	7.6	42.5	20.1
62)Air Transport	-	100	-	-	-	-	33.5	-	542.93	-	6.1	4.5
63)Supporting & Auxiliary Transport activities etc	23.1	76.9	90.3	4.2	99	44.1	64	18.7	206.92	1.6	62.1	42.5
64)Post & Telecommunications	28.2	71.8	91.6	0.6	95.1	26.3	44.7	1.9	210.133	1	39.6	44.3
65)Financial Intermediation except insurance	13.8	86.2	69.1	11.3	87.8	9.8	30.9	0.3	324.81	0.5	25.7	29.1
66)Insurance & Pension Funding except compulsory social security	52.6	47.4	72.4	28	81.3	3.1	25.6	-	566.208	0.1	11.9	3.4
67)Activities auxiliary to financial intermediation	47.7	52.3	92	7.7	99.1	19.2	34.4	-	327.39	-	56.2	24.9
70)Real estate activities	65.8	34.2	94.5	13.2	96.8	88.1	91.1	-	77.25	-	90.2	93.1
71)Renting of machinery & equipment etc	68.1	31.9	98.7	13.6	98.8	96.7	97.3	30.8	65.2	10.6	94.4	92.2
72)Computer & related activities	20.2	79.8	89.9	1	96.7	32.7	42.1	-	366.05	-	40.5	23.9
73)R&D	-	100	-	-	-	1.7	18.3	6.1	496.59	-	29.4	15.6
74)Other business activities	56.4	43.6	87.9	7.5	94.3	54.7	70.3	3.4	182.23	0.7	68.9	58.3
75)Public administration & Defence	0.5	99.5	-	-	42.4	-	26.1	0.6	237.56	1.5	13.2	20.6
80)Education	11.4	88.6	90.1	7.5	93.8	16.8	35.5	0.3	204.21	0.2	35.1	51.1
85)Health & Social work	29.6	70.4	95.2	5.9	97	28.5	46	1	177.3	1.4	41.5	45.4
90)Sewage & Refuse Disposal, Sanitation & similar activities	36	64	94.3	43	96.9	65.1	82.4	10.6	86.22	30.1	76.7	79.3
91)Activities of membership Organisation	54	46	84.2	29.1	97.8	11.7	79.9	3.2	85.4	4.7	84.1	77.5
92)Recreational, cultural & sporting activities	53.1	46.9	86.7	31.9	89	57	71.2	12.8	120.55	6.4	72.1	53.4
93)Other service activities	87.8	12.2	97.2	14.9	99.5	87.4	98.2	43.1	46.84	23.4	99.5	96.9
95)Private households with employed persons	-	100	-	-	-	-	97.4	12.4	46.74	0.9	98.7	99.2
99)Extra territorial organizations and bodies	-	100	-	-	-	-	94.9	4.7	79.07	-	90.6	94.4
Total service sector	51.1	48.9	94.3	22.7	98.6	38.9	61.9	8.5	157.62	5.2	59	62.2

Source: Estimated using NSSO 61st round data.

Note:1-Proprietary; 2- No Fixed Place; 3- informal; 4- no written contract; 5- daily payment of wages/salary; 6- average wage per day; 7- no social security benefits