ANNEXURE – I

As per the instruction of examiners marginal revision have been made

Examiner 1

Comment 1: The topic chosen is very important for research, with serious policy implications. There is a vast amount of literature on the subject. The contributors include sociologists, economist, demographers and geographers. However, the scholar does not seem to have seen much of literature, which is a major bottleneck that hindered the scholar in making an in-depth and valuable scholarly analysis of the problem.

Response: Section 1.4 of chapter1 covers an overall literature review (pg10-13). However, some aspects of literature are covered in various sections depending upon the focus of particular section. Nevertheless, as suggested by examiner in the section review, some more studies related to the topic have been incorporated. Studies particularly based on the impact of social and demographic factors on achievement in education have been incorporated in the revised literature review section.

Comment 2: On the measures of disparity, the scholar could have reviewed critically several measures of inequality, highlighting their relative strengths and weakness, before choosing a select few for analysis. Even when two or more are used in the same context, it would have been useful had the scholar described why both are used and which needs to be preferred to the others and why? Some scholars use disparity indexes mainly in the context of regional (geographical) inequalities; and measures of inequality are used when inequalities between social and economic groups of population are to be examined.

Response: Examiners comment is very much appreciated. Inequality assessment comprises many dimensions. Economists are concerned specifically with the economics or monetarily-measurable dimension related to individual or household income and consumption inequalities. However, this is just one perspective and inequality can be linked to inequality in skills, education, opportunities, happiness, health, life expectancy,
welfare, assets and social mobility. Inequality measurements are also widely used in health inequality assessments. The conventional Lorenz curve plots the cumulative share of total income against the cumulative proportion of income receiving units. It is generally used for analysing the size distribution of income and wealth, to estimate the Gini index and other measures of inequality and poverty. However, an important limitation of the traditional models of the Lorenz curve is a lack of satisfactory fit over the entire range of a given income distribution. Also Lorenz curve can indicate only overall inequality and provide very little insight on disaggregated inequality assessment.

Among the other notable measures of inequality the range, the variance, the squared coefficient of variation, the variance of log incomes, the absolute and relative mean deviations were also considered and although Gini index was used at the initial stages however they are insufficient to asses inequality comprehensively. Therefore, the method proposed by Krishnamoorthy and Kulkarni (1993) is found to be more appropriate for uncovering social disparities between and within group disaggregated by demographic characteristics. While the method proposed by Krishnamoorthy and Kulkarni help to understand aspect of inequality, the measure of inequality using Theil index comparatively gives more insightful results which provide disaggregated components of inequality based on decompositional analysis. Using these advanced measures of inequalities at the national level can be decomposed into within-group, between group, and overlapping components. In a similar way at the cross national and cross state level it can be decomposed into within-country, between-country, and overlapping components.

Even the measurement of world income inequality, micro level data is desirable in which unit of analysis is household or individuals of the countries. Representative individual based micro data is preferable for this index. The structures of the inequality index were very much appropriate based on the aims and objectives of our study. The main focus of our study was to measure the types of inequalities across regions, gender and other demographic characteristics. The major strength of the Theil index over the other index of inequality lies in the fact of assessment of intra and inter group disparities depending upon the demographic characteristics. Although the analysis could have been further
strengthened by using the concentration index to measure the locus of inequality by demographic characteristics, the measures are used interchangeably depending upon the focus of the studies.

**Comment 3:** The scholar’s definition of social groups does not include religious groups.

**Response:** The analysis by religious groups could have been done using religion as one of the parameter. NSSO data gives the scope to examine on basis of religious group also. However, on critical examination through various literature reviews mainly on the historical context of caste in India, it was found that religious deprivation was not as prevalent as caste deprivation in access to education. Although it is true that there were gender discrimination in access to education as similar to caste discrimination but the same cannot be said for religion.

The main reason for this was the historically deprived section uniformly did not follow or belong to any particular religious group. Although later stages with conversion there were many Scheduled caste and tribe converts, in case of Muslims, various literatures suggest the conversion were mainly from the upper caste of society and not from the socially outcaste. Singh (1998) on caste in India also elaborated that although there were discrimination among all religious groups but it was not as widely practiced and followed as in Hindu religion. One such example quoted, was the Sayyeds and Sheikhs among Muslim although were placed in upper echelon of social class the lower groups such as Ansaris and Khatris were not discriminated or deprived of education but the employment structure was arranged in such a way that they were made to follow their traditional occupation of butchering etc. There were further such instances where caste discrimination existed in common eating place and various other religious function but they were not treated as outcaste, further they were not deprived of education although it can be argued indirectly the structure did not allow for access to education but were not as prevalent and rigid in structure as in Hindu religion. However, it will be indeed an interesting exercise to examine the educational achievement of population on religion most prominently the difference in achievements of Christian and Buddhism population.
converted from deprived section who are now considered as OBC, OEC in different states with the traditionally deprived communities of Hindus. There is ample research potential to explore this issue in future.

Comment 4: NSSO also gives estimates by economic groups of population, which are not examined by the scholar. Does the scholar feel that inequalities between different economic groups of population are not so important as inequalities between social groups?

Response: The main emphasis of the thesis was to measure the inequality between social groups using different demographic characteristics. Further, the study examines the level of inequality between and within social groups using the demographic characteristics. Household type by employment both in rural and urban regions were examined between and within social groups. The results revealed significant inequalities in terms of achievement in higher education by type of employment. This clearly indicates, economic inequalities are also as much important as social inequalities. However, the literature review suggested historically the community were not only deprived socially but also economically which is supported by data and discussions. Although, such a study will definitely be an interesting exercise giving a wide coverage to economic inequalities within social inequalities and shall incorporate in future analysis.

Comment 5: A brief attempt is made to make projections of distribution of population by social groups and age groups in chapter 5. First, though both in the text and in the titles of many tables educational level is referred it is not clear; there is no reference to educational level; the estimates are by social groups and age- groups. Secondly, neither the purpose of this attempt nor the methodology is very clear. There are obviously better sound methods of making population projections by different social and age groups.

Response: The projection attempted in chapter 5 is the distribution of population by social groups at different level of completed education and by age groups. The distribution of population by social groups and completed level of education between two
time periods is averaged to project the future projections. There is indeed a lack of clarity in the methodology of chapter 5 which is now revised. Carrying capacity model is widely used in the context where the resource is limited with a higher demand for resource leading to a higher level of competition. Carrying capacity analysis while highlighting disparities and elimination through interventions, deals with the counteracting factor of relative growth of both population by age group and educational level and how it is likely to impact the resource. Hence, the carrying capacity model was preferred over other method and also an attempt was made to study this new method.

**Comment 6:** Lastly, no serious attempt has been made to explain the observed inequalities – either statistically or otherwise. Why do such inequalities exist at the levels they are? What policies and development strategies have contributed to strengthening or reducing inequalities? What need to be done to reduce the inequalities? These questions have not attracted the attention of scholar.

**Response:** Taking consideration into the comment necessary additional substantive inputs have been incorporated in the conclusion chapter. Further, suggestions on reducing the inequalities between social groups have also been added.

**Comment 7:** The findings and their implications could have been more sharply discussed in the wider context of higher education and employment policies in India to make the study more useful.

**Response:** Section 7.3 of chapter 7 discusses the linkages of higher education with employment. Further comparison in percent representation of population with and without higher education in various grades of employment is shown in figure 7.5.1 and 7.5.2. The linkage is further examined by demographic characteristics such as gender and household type. The policy issues of higher education and its linkages with employment have been incorporated in the revised Summary and Conclusion Chapter of the thesis.

**Examiner 2:**
**Comment 1:** The author is advised to check the tables 5.6.3, 5.6.4 and 5.6.5 not clear for the age group 25-29. The figures given are the distribution of population by social groups (1991 and 2001) and not the distribution of the population with educational level matriculation and above. I am not sure what figures the author has used for projecting it.

**Response:** The following clarifications have been incorporated in the revised chapter.

Table 5.6.3 gives the projected population by educational level and age group in percent that would exist in 2011 of different social groups. If the current trend of population growth and distribution both population and educationwise is prevalent in India. The distribution of both proportion wise distribution of population and education wise from census 1991 and 2001 were averaged and projected to derive the existing distribution.

There are two concepts basically used, one is the rate of growth of both population and education wise from year 1991 to 2001, the average rate of growth by using the rate of growth of 1991 and 2001 the competition factor is used, which is mainly the extent of difference at various level of higher education.

For example, a social group in the age group 15-19 with completed level of matriculation and above in the year 1991 is likely to enter the age group 25-29 with the completed level of education graduation and above by the year 2001. Instead of using the basic average the rate of growth and competition factor were further modeled using the carrying capacity model. Assuming the existing level of distribution of population by age group and educational level to prevail between 1991 and 2001 and also the difference, means the existing population in the age group to the existing educational level achievement in the same age group is used as a competition factor. Table 5.6.3 shows the basic average rate of growth to project the population by education level in year 2011 using the population for the year 1991 and 2001 as the base population. Table 5.6.4 shows the inclusion of modified growth rate and competition factor using the carrying capacity model and population distribution with education level is estimated for the year 2011. Table 5.6.5 compares the population distribution with education level with and without using the growth rate and competition factor from carrying capacity model.
Comment 2: Please check page no. 167, figure 6.2.1 for the year 1998 (101.4?)

Response: Checked and clarified as follows, figure 6.2.1 shows trends in percent of recommended SC/ST candidates selected in reserved and general vacancies in civil service (main) examination in India. The percentage shown for candidates selected in reserved vacancies was 101.4 whereas in actual it is 89.3. The necessary corrections have been made.

Comment 3: Repetition in several places could have been avoided. For example, the discussion on the methodologies has been repeated in all the chapters apart from methodology chapter 2

Response: In chapter 2, the methodology provides the overall descriptions of methods and models. The methods have been described in greater detail in the respective chapters keeping in mind the context of the chapters.

Comment 4: In some places, the discussion in the text does not match with the table results. For example, page 90, line 6…. Tamil Nadu shows disparity value less than one in the year 2005-06….. check the table 4.3.3.

Response: Table 4.3.3 shows the state of Tamil Nadu with disparity index value greater than one for ST, SC and OBC, in the discussion it was mentioned that the disparity values were lesser than one. This inadvertent mistake is now rectified.

Comment 5: The discussion of results could have been linked with the differences in efficiency among states (if exists) in implementing the affirmative policy in bringing down the inequality. It is not clear who benefitted from this policy, whether non creamy layer or creamy layer? The study highlighted that in some states upper caste agricultural labourer had lower representation in higher education which seems to indicate that poverty is an important determinant for achievement in higher education. How poverty and social groups interacts in participation in higher education? The author may consider
for doing the state level variation in employment disparity by social groups so that the
findings of this can be linked with chapter 4 to get further insights.

**Response:** The objective of statewise analysis was to identify the states with better and
worst performance. In India there are some states with larger proportion of population ST
as seen in North eastern states, SC’s in Punjab and Uttar Pradesh and OBC’s in Tamil
Nadu, Maharashtra. The inequality indices in general showed in some categories such as
ST in North eastern states and OBC’s in Kerala and Tamil Nadu and SC in Himachal
Pradesh are in par with the caste Others in terms of achievement in higher education as
compared to other states in India. However, when decompositional analysis was done
using the Theil Index it was difficult to identify states with better achievement in higher
education as compared to other states. Results from decompositional analysis showed
some states with different demographic differentials within social groups but the between
group analysis of social group showed higher level of inequality as compared to within
group inequalities. Even though the within group inequality were more prevalent by
household employment type it could hardly establish the differential between social
groups in statewise analysis. There is indeed potential for further research to analyse
income inequality and achievement in education.

**Comment 6:** One of the limitations of this study is that the analyses did not control
simultaneously other factors in bringing out the inequality in higher education though
attempts were made to look at the differentials in some of the characteristics. The
inequality in access to good quality of education upto secondary level is also important
determinant for achievement in higher education by different social groups. The higher
dropouts in higher education from disadvantaged groups maybe also due to poor quality
education that they had in school education.

**Response:** Examiners comment is appreciated. The inequality in access to secondary
education is an important determinant for representation in higher education. The study
tries to examine the consequence in terms of representation in higher education by social
groups, but the available data on access and availability to quality education is
insufficient to include it as a factor. The high drop out in secondary education and limited access to higher education need to be examined, possibly though primary survey data and suggestion of the examiner will be considered in future analysis.
ANNEXURE - II

Ph.D Thesis Abstract

Introduction: Education and Employment are two basic indicators to measure the level of development achieved by a group as it results in more awareness besides contributing to the overall improvement in health, social and economic well-being. In particular, higher education is considered to have a positive impact on economic growth and human development of the nations. In India, the hierarchical system of caste historically denied educational access to high income yielding occupation to those who were kept in the lower strata of which are now called as Scheduled Caste (SC) and Scheduled tribe (ST) of India. With the restructuring of the economic structure, there is a massive shift from mass industrial production to high technology, manufacturing and information processing which leads to a great demand in higher and technical education. Hence, it was felt to critically examine higher education and employment social disparities in India identify and fill the gaps in achievement of higher education, also to examine whether constitutionally committed reservation system has succeeded in integrating the marginalized social groups into mainstreams.

Objectives: The objectives of the study are: first, to assess the representation of population proportionwise in higher education by social groups and demographic characteristics in India and in selected states. Second, to measure the level of inequality in the achievement of higher education by various social groups and their demographic characteristics in India and in selected states. Third, to project population proportion-wise and assess the representation in higher education by social groups using modified general logistic growth model. Fourth, to assess the trends and disparities in the employment in public sector organizations by social groups in India during the postreform period by using various sources of secondary data.

Data: For most part of the analysis, data have been used from NSSO 55th (1999-2000) and 62nd round (2005-06); from employment and unemployment surveys (EUS) including information on education. In addition, data from census of India (1991 and 2001) from socio-cultural tables of India are used. The data on employment are mainly compiled and
extracted from the website www.indiastat.com and official statistics on employment for various time periods.

**Methodology:** Measure of disparity index is used to assess the representation in higher education by social groups. Further to study the existence of between and within group inequalities by background characteristics in higher education, the Theil index has been applied. This index provides a decomposition of the total inequality in two main components: between and within group inequality, thus this index is used to analyse whether between group disparities by social groups or within group disparities by background characteristics or both impacts the level of inequality in terms of achievement in higher education by social groups. General logistic growth model is used to project the growth rate of the population in higher education using census 1991 and 2001 time periods. Comparative analysis by social groups with and without higher education at different grades of employment of India is analysed by using the measure of inequality between employment rich and poor ratio by using the natural logarithm of the ratio of the arithmetic mean employment rate to the geometric mean employment rate.

**Findings:** The extent of disparity in terms of achievement in higher education by caste ST, SC and OBC with respect to the reference group the caste Others measured by disparity indices in general indicated caste ST, SC and OBC are lagging behind the caste Others in terms of achievement in higher education. The highest level of disparity is seen for the caste ST, and the lowest level of disparity is observed for the caste OBC when compared with caste Others in terms of achievement in higher education in both the time period 1999-2000 and 2005-06. Within group analysis revealed that except states like Tamil Nadu and Kerala the representation of females from caste OBC in higher education remained stagnant between the time periods 1999-2000 and 2005-06. Class within caste is found to be a significant factor and is relatively significant among caste ST and SC than OBC. The growth experience in almost all states of India suggests that the growth in representation in higher education has been lowest for the scheduled tribes and scheduled castes in general. However, the representation in higher education is lowest and is seen more prominent in some states like Rajasthan, Bihar and Tamil Nadu. The state of Himachal Pradesh is found to be better represented proportionately in higher education between all the social groups. Gender differentials are found to be relevant in caste OBC
in almost all the states and most prominently in states of Bihar, West Bengal, Maharashtra, Karnataka, and Andhra Pradesh with exception of states of Tamil Nadu, Himachal Pradesh and Kerala. Analysis by representation at various grades of employment found concentration of caste SC, ST at lower grade of employment and caste OBC and Others at higher grades of employment.