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ROLE OF EDUCATION AND DIVERSITY IN INDIA
How Social Structure Impacts the Gross Domestic Product?

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1. Introduction

The poor in fact face multi-dimensional disadvantages in employment, educational attainment, skills, nutrition, health and other economic opportunities (Shariff, 1999; 2004; Unni, 2007). While the poor are ready and willing, often do not find paid-work due to low educational attainment and poor work-skills. Such deprivations enhance the economic wedge and inequality between the poor and the rich, as the latter are the recipients of the higher income during the post-reform period in India (Shariff: 1999; Desai et. al: 2010). Such inequality is intense and widespread as the disadvantaged constitute a high share in India's total population. One of the most enduring relationships which express *higher income levels is with the levels of education*. This paper therefore explores the relationship between *levels of education and the share of GDP* and then whether this relationship is consistent amongst various socio-religious categories of people across India. This paper provides dominant leads into to policy initiatives needed to improve provisioning of higher levels of education to all Indian youth, and identifies communities who require a special policy focus.

Generally the disadvantaged are prone to many types of distresses and vulnerabilities during the whole of their life cycle. Educational deprivation and lack of employment opportunities are two greatest disabilities which enhances deprivation. The relationship that people have with their local environment such as the social forces, institutions and the cultural values that sustain and contest them determine the opportunities through which people contribute to the national GDP. Over all, the extent to which the newly evolving economic (reforms) changes could harm a subsistence system as opposed to benefiting it, in other words, the extent to which communities can be adversely affected by the impact of economic and social change are to be studied and understood as well.

The poor are trapped in the disadvantages, distresses and vulnerabilities cyclically – today they are disadvantaged and do not have education, good health, skills required to get remunerated proportionately to their hard work and as a result of which they are highly prone to severer distresses and vulnerabilities during the subsequent periods. Thus one finds a vicious cycle in which the poor are trapped intensifying distresses and vulnerabilities which transcend generations with limited opportunities to escape the poverty trap.

Often the responsibility of a government is to achieve and sustain high growth in economic and other developmental spheres; yet it has to aim to ascertain socially secure and value based human life to its citizens. In the contemporary phase of relatively higher growth trajectory in India, it is essential that development is inclusive and broad based so that clearly identifiable disadvantaged groups get an equal opportunity to crash out of the vicious cycle of poverty. Identifying the disadvantaged groups, providing them with appropriate policy advantage and enabling groups to reap the demographic dividends are worthwhile policy directions.

India is a highly diverse society in terms of caste, religion, region, place of residence such as rural and urban areas, language and so on. Most of the deprivations such as poverty, illiteracy, low productivity register high correlations to the above cited attributes. It is but natural that any study of diversity and development must identify the economic disadvantageous associated with such attributes and also assess the role, the education system plays in contributing to the India's inclusive economic growth (GOI 2006|Sachar Committee Report).

Estimating the Economic Contribution in Nation Building: The analysis and discussion in this paper in-

tends to empirically evaluate the contribution of different socio-religious communities (SRCs)[2] to Indian 'gross domestic product'. It also estimates the value added made by the SRCs at different levels of education. Such an analysis is built upon the estimates of the work force participation according to SRCs and levels of education. This analysis, therefore, has made it possible to highlight the relative productivity differential according to SRCs and hence identify the disadvantaged groups or communities. It is obvious lower the productivity level or the value added higher the level of disadvantage; and such evidence should compel the governments to devise more pro-poor and just polices so as to ensure a durable and balance social structure and harmonious living.

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2 The 'socio-religious communities' in the Indian context was first conceived by the popularly known 'Sachar Committee Report. Given the size and distribution of various social, religious and caste groups the categories identified are (1) the SCs & STs together, (2) the Hindu Other Backward (self- reported) Classes, (3) all other Hindus as a general Hindu category, (4) the Muslims the largest of the minorities, and (5) all other Minorities all together form a sizable 5-6% of the total population

Methods and Materials

The estimates of the GDP shares according to specified socio-religious groups were possible by linking data from the 66th Round of National Sample Survey for the year 2009-10 and sectoral GDP estimates given by the National Accounts Statistics (NAS). This is a rare feat of sorts, as such an exercise of this nature has never been undertaken in India or abroad; although a few have identified the need to undertake such analysis for the sake of resolving a number of puzzles in the Indian growth and equity story (See World Bank, 2011a, 2011b). In the following analysis, the inter-sectoral labour shares extracted from the NSS are reconciled with the sectoral-GDP estimates so as to approximate the relative share of SRCs to the Gross Domestic Product (GDP). The analysis further extends to understand the relationship between the value added so derived and the level of education of the labour force. The depth of analysis extends to a unique and rare segregation of the service sector into the 'traditional services' and 'modern services'. The analytical and empirical process leads to an estimation of the SRC specific GDP-productivity quotients for easy understanding and interpretation.

Decomposing Gross Domestic Product (GDP): Wage and Non-Wage Income

The GDP measures monetary value of all goods and services produced in the economy within a given period, normally during a year. All goods and services produced by various economic activities like agriculture, forestry, fishing, mining, manufacturing, government services, private services, community and personal services etc. are included in calculation of the GDP. The GDP thus measures the total value of final goods and services produced by domestic institutions during the reference period.

The Indian economy is sub-divided into 9 broad groups, which are further divided in 13 sectors, and a number of sub-sectors at two, three and four digit levels. The National Accounts Statistics (NAS) provides estimates of GDP originating in the broad groups and sectors at different levels. Statement number 76.1 of NAS-2011 provides distribution of GDP into wage (compensation to employees) and non-wage (operating surplus/mixed income) income for these groups of the Indian economy. Wage and non-wage decomposition of GDP for all the broad sectors can be done using wage (compensation to employees) data. Consumption of fixed capital and operating surplus/mixed income is treated as non-wage income.

At the first step, the NAS information on GDP broad and main sectors is decomposed into wage and non-wage incomes. In case of 50 sub-sectors for which the wage component is not available from the NAS, the wage distributions from the NSSO 66th Round are used. NSSO provides information on workers' weekly wages in various sectors/industries of the economy at the at 5 digit NIC-2004 classification. The sub-sectoral wage incomes are decomposed by using the share of weekly wage of each sub-sector and subsequently aggregated in to broader sectors of the economy. Further, by subtracting these sub-sectoral wage incomes from the sub-sectoral GDP, non-wage income is also estimated. That is,

GDP (sub-sector) – Wage payments (sub-sector) = Non-wage income (sub-sector)

In the second stage, the non-wage income is decomposed into public and private categories, as the operating surplus of the public sector does not directly accrue to households' income. Data on the operating surplus of the public sector is taken from the NAS for all the broad 9 groups and 13 main sectors. The structure of the total GDP thus derived is used to disaggregate the sectoral operating surplus within the sub-sectors. This sub-sectoral operating surplus of the public sector (which is not accruable to households' income) is subtracted from the sub-sectoral non-wage income so as to derive the private non-wage income, which

accrues as the households' income. The estimates thus derived encompass just about 96.6 per cent of all national GDP and is distributed and allocated across the SRC categories engaged in different sectors and sub-sectors of the Indian economy. In this analysis, the wage component of the GDP has been worked out to be Rs. 1887092 crores, which is 32 per cent of the GDP; and the non-wage income to be Rs. 4035357 crore, 68 per cent of GDP for the year 2009-10

Sectoral/Sub-Sectoral Shares of GDP for Levels of Education and SRCs

The 66th round NSSO survey on Employment and Unemployment provides information on individual wage and salary earnings and monthly household consumption expenditure in different sectors of the economy as per the National Industrial Classification (NIC-2004) codes. These data are amenable for decomposition according to levels of education and the SRCs. In all as per the NIC classification, the GDP flowing from the whole economy is collapsed in to 943 sub-sectors and further aggregated in to 61 sectors. The percentage share of GDP from each of the level of education and each SRC in wage income (wages and salaries) and the household monthly consumption expenditure of self-employed individuals in the sub-sectors are estimated. Applying these shares at successive levels of education and for the SRCs categories in the wage income for a particular sub-sector, the wage component of GDP is estimated. The non-wage component of sub-sectoral GDP is distributed across educational levels and SRCs using the share of consumption expenditure of respective categories reporting themselves as self-employed in that particular sub-sector. [3]

> Wage payments accruing to a 'educational category' /SRC = % shares in wages and salaries of that community (estimated from NSSO survey) * total wage payments in sub-sector estimated in Step 1.

Non-wage income accruing to a 'educational category' / SRC = % share in monthly household consumption expenditure of individuals reporting self-employed of that community (estimated from NSSO survey) * total Non-wage income in sub-sector.

Where non-wage income in that sub-sector = GDP of sub-sector – total wage payments in that sub-sector minus operating surplus of public sector in that sub-sector.

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3 The NSSO provides information on household monthly consumption expenditure and the occupation (wage earners, salary earners and self-employed) of all individuals engaged in different sectors of the economy. The share in monthly consumption expenditure of those individuals who have reported themselves as self-employed is used to decompose the capital part of the GDP across social religious communities in different sectors of the economy as there is no such direct data is available on capital earnings of the individuals. It has been assumed that the expenditure of an individual is the proxy for his income and savings.

2. Empirical Analysis

This section is in two parts; the first presents the growth and structure of the Indian GDP during last six decades. The second part discusses the results of the exercise that investigates the relative shares of different 'levels of education' and various SRCs in different sectors of the economy and the labour force.

2.1 Growth and structure of Indian GDP

All the sectors of Indian economy – agriculture, industry and services – have shown growth over last six decades. During the past over three decades the highest growth in economy as well as contribution to the GDP is credited to services sector followed by industry and the agriculture sector. In the following the growth in Indian economy as well as the sectoral GDP and structure (share of different sectors to the GDP) in last six decades are examined.

(a) Decadal growth of Indian GDP during 1950s-2000s

India, for many years has been an eye-catcher for the global investors and services providers because of a large pool of educated and easily trainable youth, as a result of which, India is now a hub for outsourcing. India's services sector, therefore, is following outstanding growth trajectory especially in last two decades. The Indian GDP growth faced a dip in 1970s brut revamped in the 1980s from the dip. The 1990s saw sustained growth of around 6 per cent and further more than 7 per cent in the last decade (Figure 1). The dip in 1970s is attributed to the two sharp declines in the growth of agriculture sector – first in 1975-76 (from 12.9 per cent in 1974-75 to -5.8 per cent in 1975-76) and second in 1978-79 (from 2.3 per cent in 1977-78 to -12.8 per cent in 1978-79). The steep fall in agriculture sector's growth in the two years affected the whole economy as well as the growth in other sectors since Indian economy was primarily dependent on agriculture contributing highest share in the economy followed by services sector, and industry being at the bottom until 1970s.

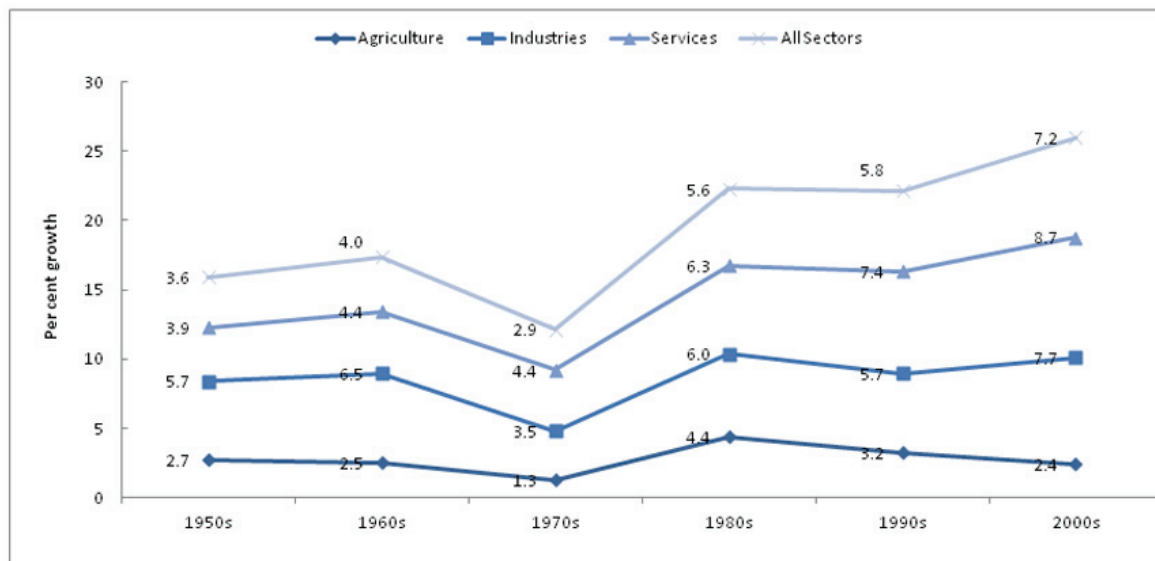**Fig 1: Sectoral and overall growth in Indian economy**

Figure 1

(b) Structure of Indian GDP during 1950s-2000s

As stated above, till late 1970s, the highest share to the Indian GDP was accrued from agriculture sector followed by services sector and then the industry sector. 1970s was the time when the transformations in the structure of the Indian GDP started. During 1978-79 agriculture sector was superseded by services sector and during the second half of 1990s (beginning 1995-96) industry sector also superseded the agriculture sector relegating it to be less significant in terms sectoral composition of the National GDP (Figure 2).

The decadal sectoral compositional structure of India's

GDP at factor cost at 2004-05 prices shows that in last decade the share of services to the GDP was about 53 per cent while agriculture and industries sectors contributed 19.6 and 27.7 per cent respectively. The sectoral composition of the GDP has changed significantly since last six decades. The share of agriculture (and allied activities) sector declined by 31.1 per cent points from a high of 50.7 per cent in the 1950s. The share of industry sector has shown an increase of 10.4 per cent points from 1950s through last decade. However, the services sector's contribution to the GDP has increased by a massive 21 per cent points from 32 per cent in 1950s to 52.8 per cent during the 2000s.

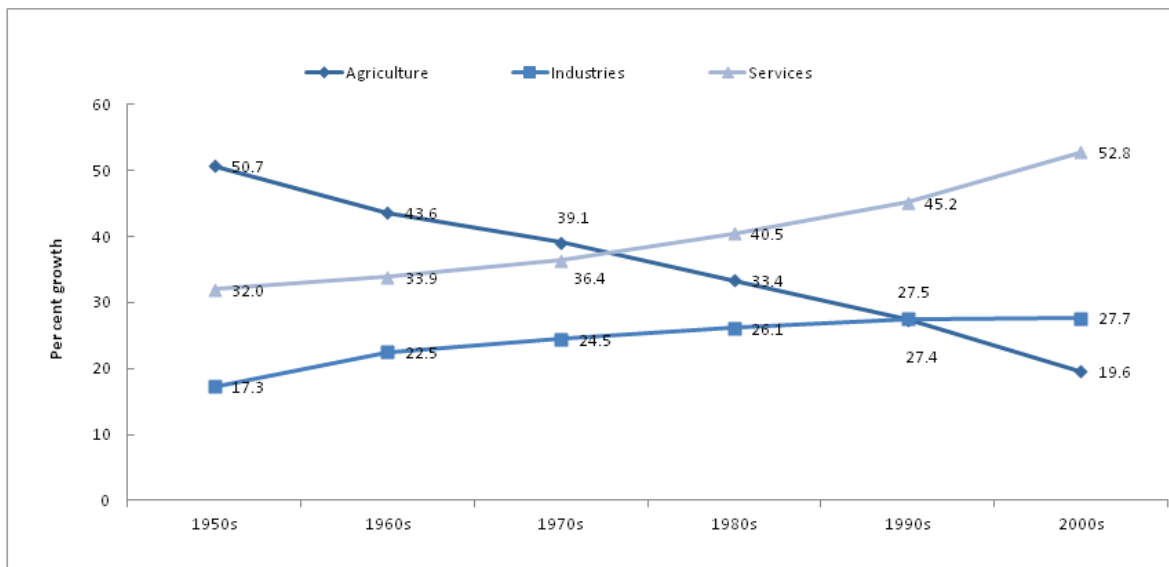**Fig 2: Sectoral Shares in GDP during lasast 6 decades**

Figure 2

(c) Year-over-year growth and structure of Indian GDP in last decade

A review of growth and structure of the GDP in last decade divided in two quinquennials – 2001-to-05 and 2006-to-10 – it is clear that in the second quinquennial of last decade Indian GDP growth reached a historical high at 8.4 per cent. It is clearly demonstrated in Figure

3 that both the growth in share of services sector and the decline in share of agriculture sector to the GDP have picked up the momentum even at a faster pace from 2005-06. Stagnation in share of industries sector, continuous momentum in growth in share of services sector and continuous decline in share of agriculture to the GDP can even be seen in the year wise GDP structure of last decade (Figure 4).

Fig 3: Sectoral Growth in GDP during last decade
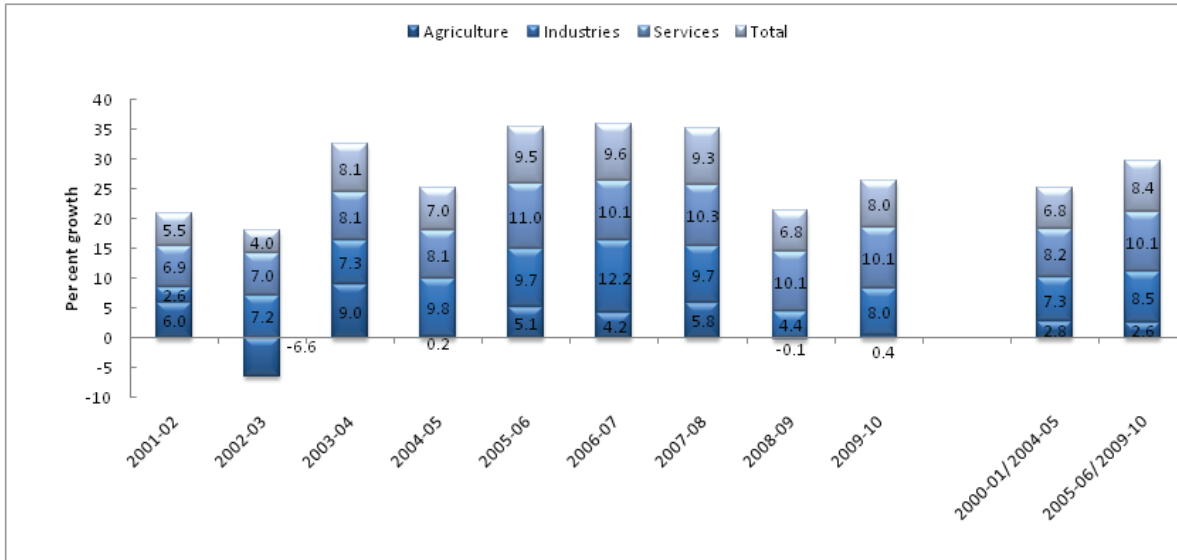
Figure 3

Fig 4: Structural Shares of GDP during last decade
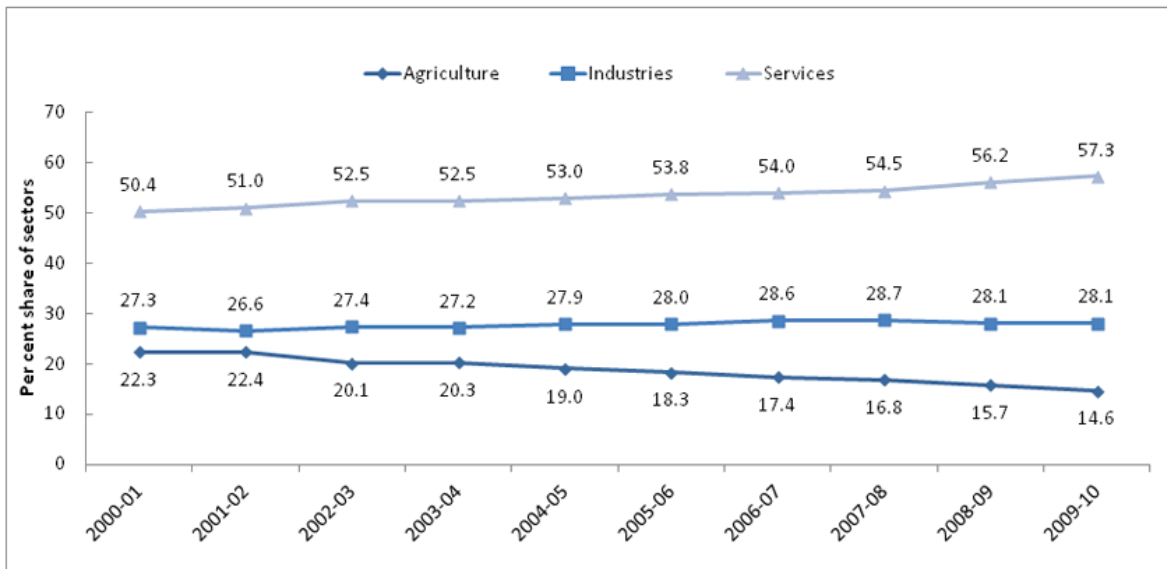
Figure 4

The Social Dimensions of GDP:

The most recent GDP structure by levels of education and SRCs, and associated sectoral workforce as well contributions and relative productivity levels for the year 2009-10 are presented in the following sections:

2.2 Estimates of the GDP according to 'levels of education' and SRCs

The overall structure of the workforce employed in different sectors and associated contribution to the GDP suggests a harsh reality; that more than half of the workforce is employed in Agriculture sector which generates only about18 per cent of the GDP thereby being the least efficient sector in the India economy (See Figure 5). On the other hand, services sector is most rewarding which by employing just about 28 per cent of the workers contribute more than 55 per cent to the GDP. Industries sector employs about 21 per cent of the workforce and contributes to about 27 per cent of the GDP.

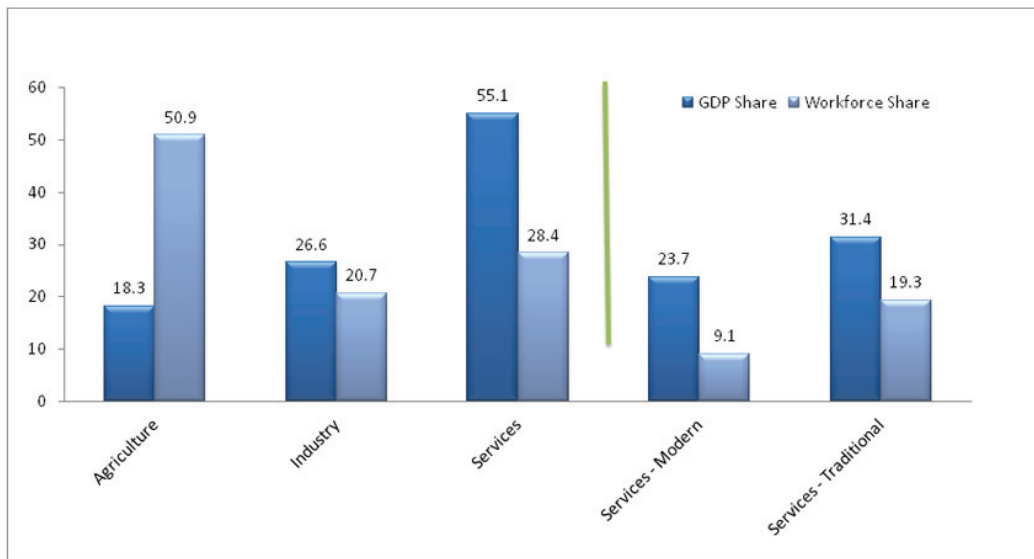**Fig 5: Sectorial GDP and Workforce Share 2009-10**

Figure 5

(a) GSP Shares according to the 'levels of education'

Figure 6 highlights the shares of different levels of education in workforce and GDP in the Indian economy.

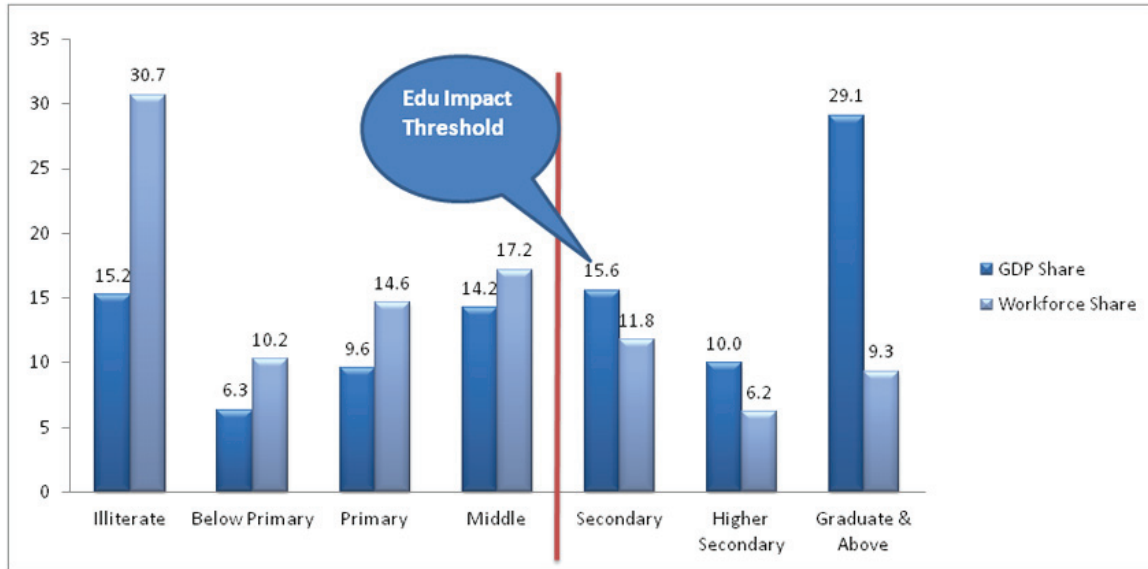**Fig 6: Shares in GDP and Workforce by level of education**

Figure 6

It is very well established fact, through decades of research across the world, that education is the foremost driving force for any kind of development. The economic development of an individual and even a nation is highly correlated with education which is also an outcome of the analysis in this paper. The estimates (Figure 6) show that illiterates' share in the workforce (30.7 per cent) is twice their share in the GDP (15.2 per cent); on the other hand only about 9 per cent of highly educated (graduates and above) contribute over 29 per cent of the GDP. Note also that up to middleclass level education the share in workforce are higher than the respective share in GDP, once this threshold level of education is crossed the per cent share in GDP supersedes the per cent share in workforce and this difference increases sharply with increase in level of education. If the efficiency quotients – that is, the ratio of share in GDP and the share in workforce – are observed (more below and Table 1) one finds that the impact of education on GDP is prominent and they are highly correlated.

2.3 Estimates of the Contribution to the GDP by various SRCs

(a) All Sectors together

In the following is a discussion about the relative contributions to GDP by various socio-religious categories (SRCs) - the categories exclusively created for the purpose of this paper. It is not surprising that the uppercaste-Hindus (HUCs) generate most of the GDP (See figure 7). HUCs constitute about 20 per cent of the workforce and generate 34 per cent of the total GDP which is highest in terms of volume for any set forming a community. This is followed by other-backward-classes-Hindus (HOBCs) who in the economy share 36.6 per cent of the labour force and 31 per cent of the total National GDP. The SCs/STs-Hindus (HSCs/STs) constitute about 27.6 per cent of the labour force and contribute 16.5 per cent of the National GDP. The Muslims, the largest of the minorities constitute slightly less than 11 per cent in the work force and contribute just a bit more than this same percentage to the GDP. The Other Minorities mostly the Christians, Sikh etc who constitute about 5 per cent in the workforce contribute 7.3 per cent to the GDP. On the whole it is clear that the minorities including the Muslims do contribute substantially approximately equal (a bit more but not less) to their share in population to the GDP.
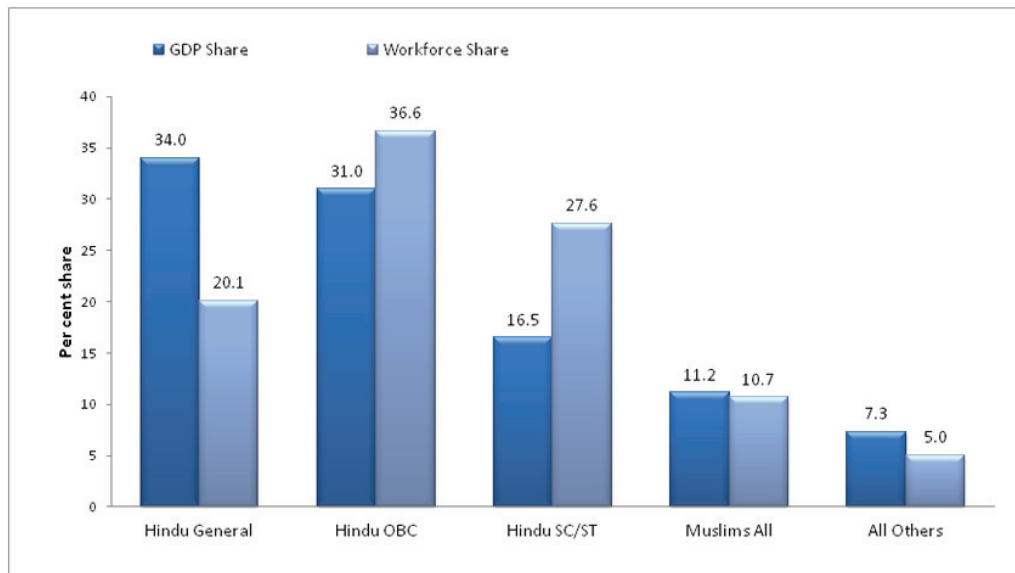
Fig 7: SRCs' Shares in GDP and Workforce

Figure 7

Sectoral Structure of Workforce and GDP according to SRCs

(b) Agriculture

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Figure 8

(c) Industry

Major contribution of 32 percent to Industry sector's GDP comes from the HOBCs who constitute more than 35 per cent in workforce; followed by the HSCs/STs who have about 30 per cent share in labour contribution and about 19 per cent to the GDP. HUCs are

relatively less in the industrial labour force with 16.4 per cent share but generate about 29 per cent of the sector's GDP suggesting their superior productivity. However, the Muslims constitute 13.5 per cent of the Industrial workforce and contribute only 11 per cent of the GDP suggesting that they are trapped in the low productive informal technical occupations (Figure 9).

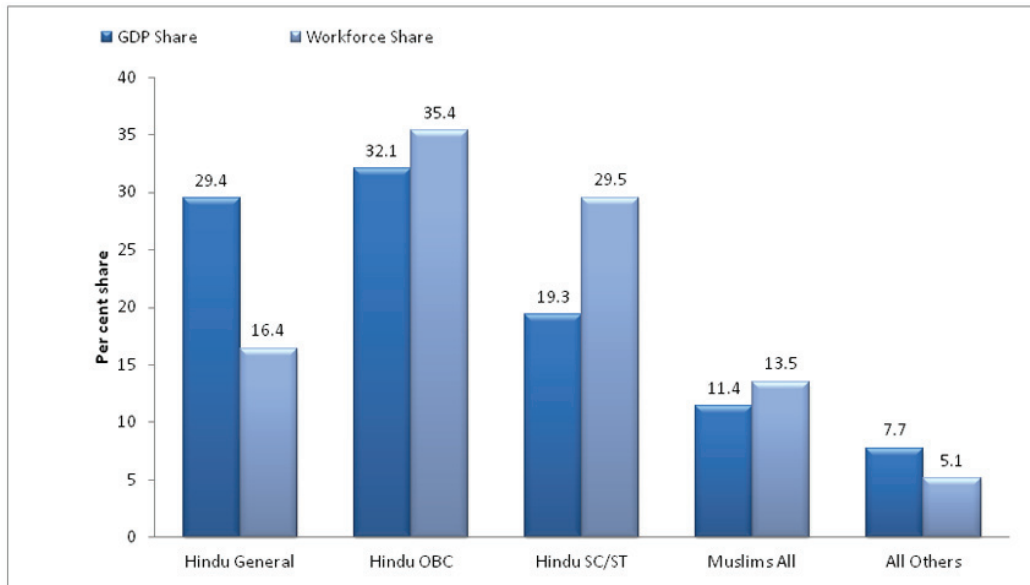**Fig 9: Industries: SRCs' Shares in GDP and Workforce**

Figure 9

(d) Services Sector

As mentioned earlier, the services sector is disaggregated into 'modern' and 'traditional' services. Modern services generally require education and skills. They include the technology aided services such as information technology, computer related services, communication, air transport, communication, banking, finance, insurance, legal services, accounting, research & development, media, public administration & defense, education, medical & health, and radio & TV related services etc. The traditional services include services which generally do not require specialized educational skill and technological support such as trade, Hotel & Restaurants, storage, rail-road-water transport, Real Estate, artisanship, personal services(Washing, Hair Dressing, and Sanitary Services etc.) etc. The following analysis presents estimates according to the services sub-sectors separately, thereby given additional perspectives in the overall services sector.

One of the dominant distinctions between the sub-sectors is that 'traditional sector' workers are mostly illiterate, only 35 per cent reporting secondary and above level of education; on the other hand all employed in the 'modern sector' are all well-educated (75 per cent educated up to secondary or above level) and urban oriented and a substantial number are HUCs. Figure 10 represents the Services sector's as well as the two sub-sectors' GDP and workforce composition by levels of education.

Fig 10: Service Sectors
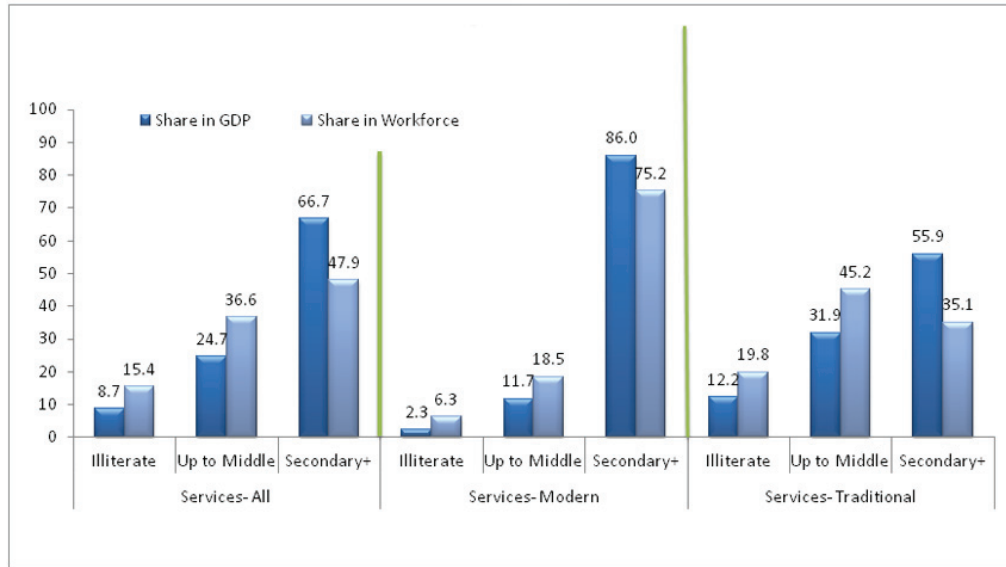
Figure 10

The traditional services sector has a share of 57 in GDP generated by the services sector and it employs 68 of total workers engaged in services sector. Modern Services sector has a share of 43 per cent in GDP and 32 per cent in workforce within the services sector (See Figure 11). The per capita GDP generated through employment in the two sub-sectors also vary significantly. Per capita GDP generated through modern services sector (Rs. 416816 per annum) is 61 per cent higher than that generated through traditional services sector which was Rs. 258684 per annum.

Fig 11: Per worker GDP and Shares of Modern and Traditional Services in Services sector's total GDP and Workforce
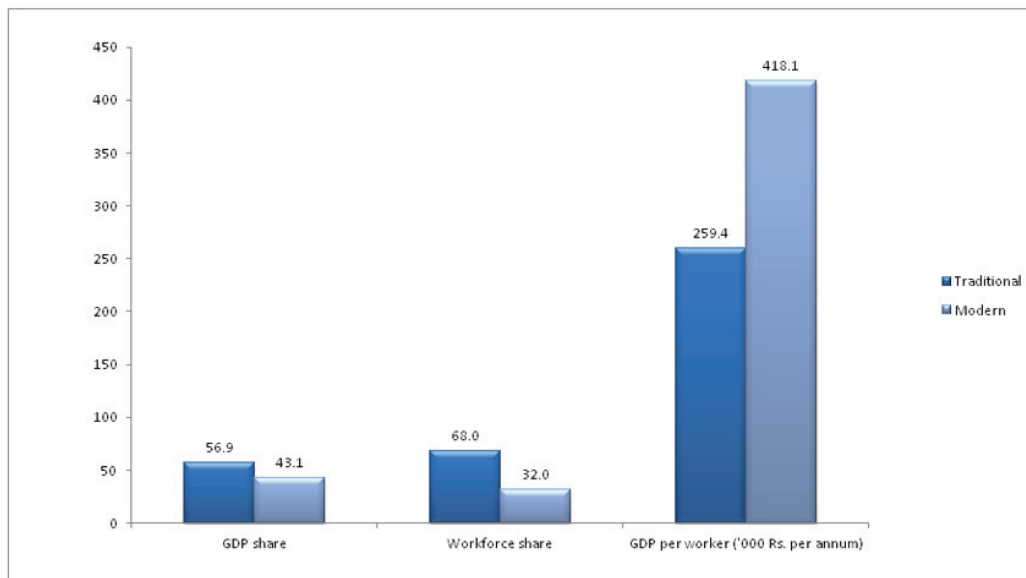
Figure 11

(i) Modern Services

Modern services sector is the most efficient sector in India. Note that it employs just over 9 % of all labour force and produces just less than one quarter of all GDP in India. Modern services sub-sector is dominated by the HUCs with about 38.6 per cent in labour force contributing about 45 per cent in the sectoral GDP. This is followed by large shares of the HOBCs and HSCs/STs having about 28 per cent and 18 per cent shares in the workforce respectively, while for both the communities the contributions to the GDP are relatively lesser by almost 4 per cent than their respective contributions to the workforce. About 7 per cent of the Muslim community labour force contributed 8 per cent to the GDP. Since educational achievements are major determinants of employment in this sector, those lower educated who worked in this sub-sector have contributed much less to the GDP.

In modern services sector, HUCs, Other Minorities and Muslims are the only communities which contribute to the nation's GDP higher than their shares in the sector's workforce; however, the difference between the share in GDP and the share in workforce is not much for the minorities including Muslims but it is quite high (about 6 percentage points) for HUCs making the Hindu higher caste population most efficient workers employed in modern services sector (See Figure 12).

Fig 12: Shares in GDP and Workforce in Modern Services according to SRCs
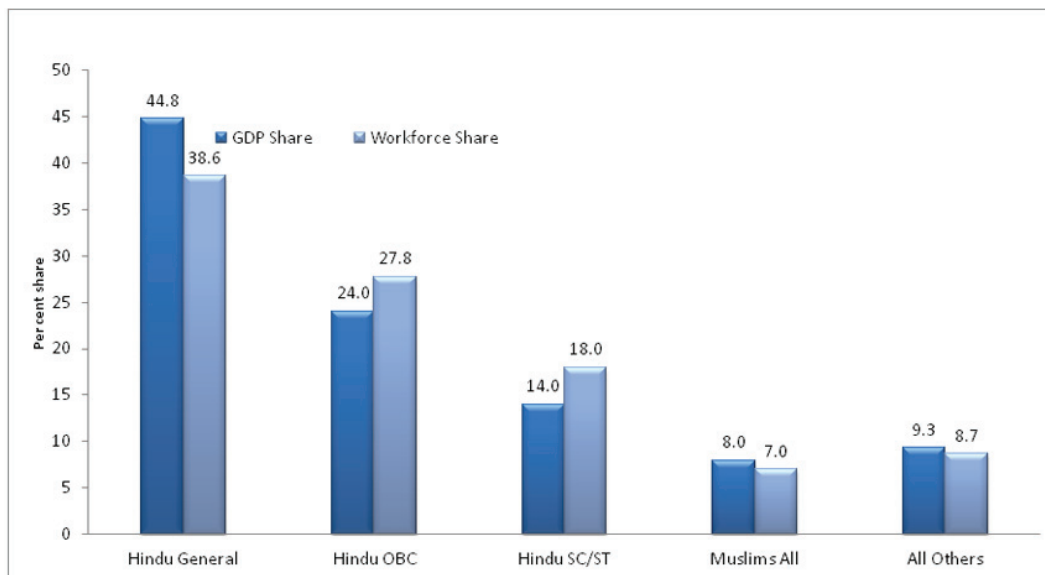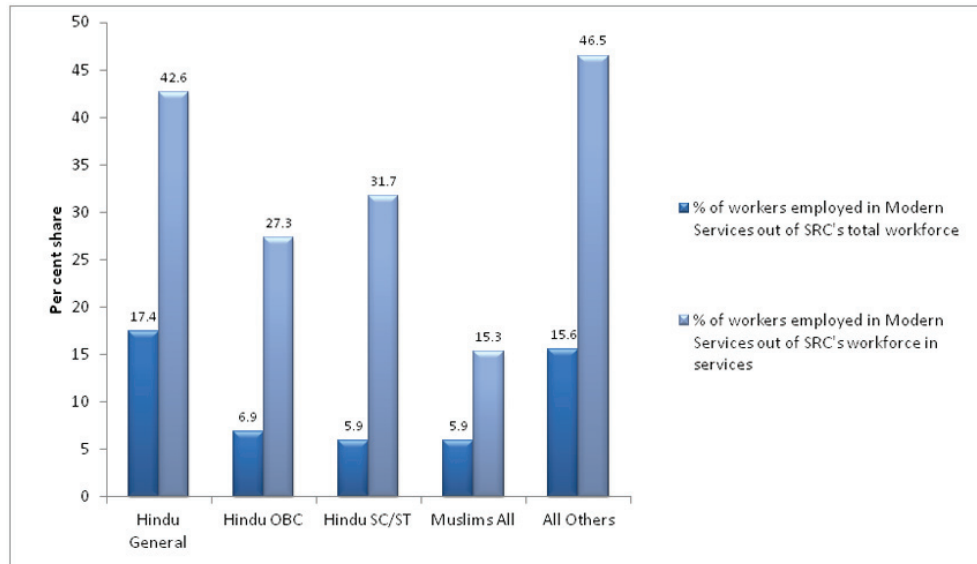

Figure 12

In the following (see Figure 13)the SRC-wise share of workforce employed in modern services as per cent of the SRCs' total workforce as well as the total workforce of the SRCs' employed in services sector are discussed. Note that only 9 per cent of the total labour force is employed in modern services, which contribute to 23.7 per cent to the GDP (See Figure 5).

Fig 13: Modern Services: Share of workers in total workforce and total workforce of services sector

Figure 13

It is useful to know the shares of workers in this sub-sector as a share to total respective SRC workforce and also as a share of the total workforce within the sub-sector (See Figure 13). Interestingly, more than 17 per cent of all the Hindu-UC work force is employed in the modern service alone which is the highest share from among all the SRCs considered in this analysis. This is followed, interestingly again, by the Other Minorities (Christens and Sikhs etc excluding Muslims) whose about 16 per cent of the workforce is employed in modern services sector which is the second highest share. Not a very large proportion of workforce is associated with modern services sector as per cent of the respective total workforces of the Hindu-OBCs (7 per cent) and the Hindu-SCs/STs and the Muslims which is about 6 per cent each, as compared to the HUCs and other minorities. This share of workers in the modern-services in case of the Other Minorities and Hindu-UCs constitute, respectively, about 46 per cent and 42 per cent of all workers in the overall services thus suggesting that the Other Minorities (other than Muslims) and the HUCs do not normally participate in the traditional services sector as much as the Muslims and Hindu non-upper caste workers do.

At a second level are the Hindu-SCs/STs and Hindu-OBCs who have relatively better shares working in the modern services of 32 per cent and 27 per cent respectively from out of their total services sector employment. Interestingly again it is the Muslims who seems to have less opportunities

to get employed in the modern services sector employment, as is evident that only about 15 per cent share of labor from out of the total services sector are employed in the modern-services sub-sector. These estimates and analysis highlights existence of a considerable amount of 'discriminatory practices' in the choice and recruitment of workforce in the modern-services sector which encompass both the public and private sector employment.

(ii) Traditional Services

About 19 per cent of the total labour force is employed in traditional services, which contribute to more than 31 per cent of the GDP(See Figure 5). The traditional services sector contributes more than one and a half times in the GDPthan its own share to labour force. In many ways this is more efficient than the agricultural sector, yet it is the inefficient sector within the services sector. Note that the modern services sector contributes to the GDP about 2.6 times than its share in labour. The traditional services sector's labour force consists of 37 per cent of HUCs, about 31 per cent of HOBCs, 18 per cent of each of Muslims and the SCs/STs(Figure 14).

Fig 14: SRCs' Shares in GDP and Workforce within the Tradetional Services Sector
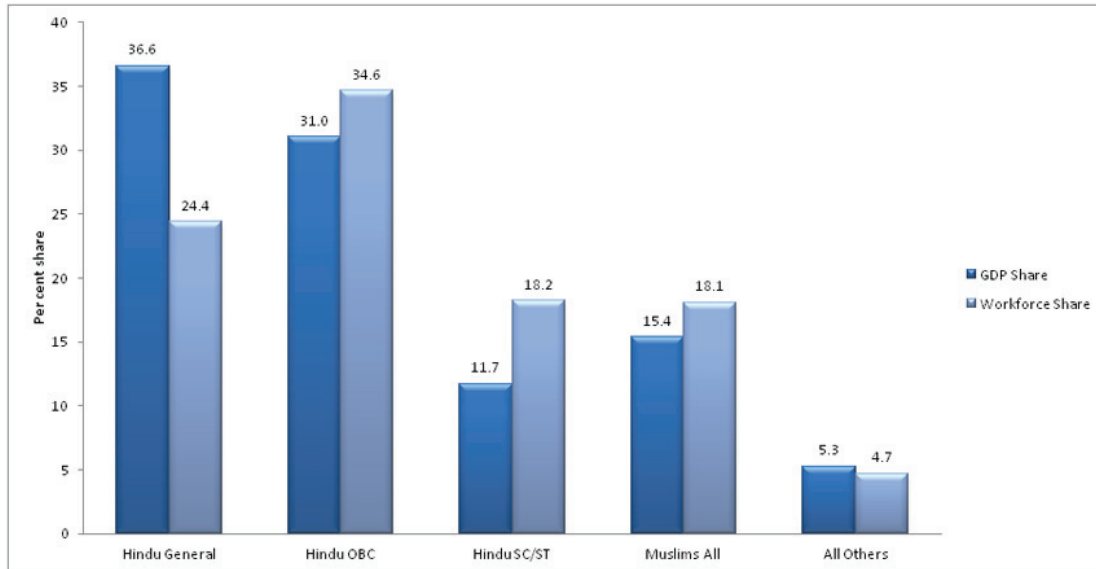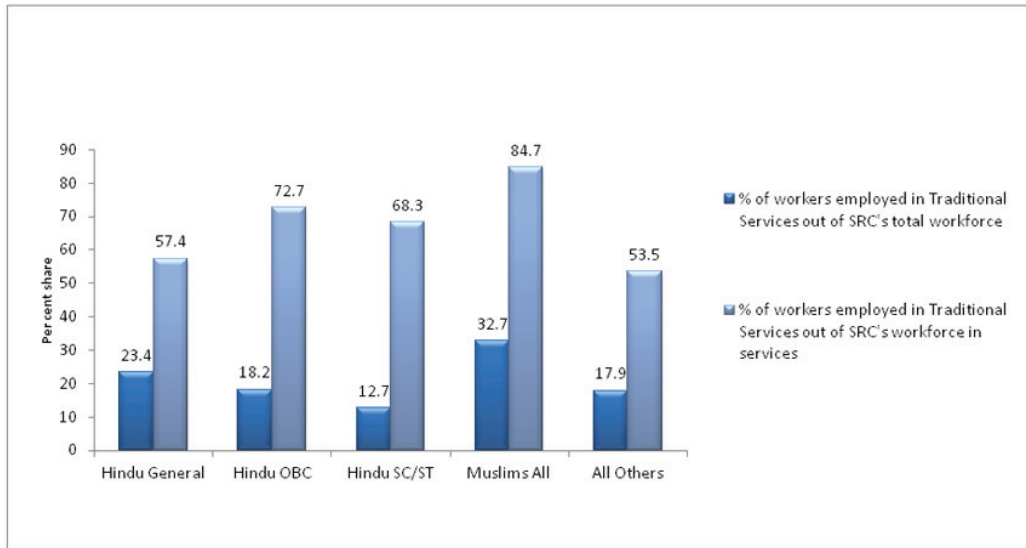

Figure 14

The share of workers by SRCs as percentage of SRCs' total workforce and workforce in services sector is presented in the graph below (See Figure 15). Contrary to the common belief only about 13 per cent of the Hindu-SCs/STs workers are employed in the traditional services (as defined by the NSSO). On the other hand about 33 per cent of all Muslim workforce is employed in traditional sector which is the highest of all the communities compared in the paper. Also about 85 per cent all Muslims working in services sector are working in traditional services which is highest compared to any other community; for example this proportion is about 73 per cent for HOBCs and 68 per cent for HSCs/STs. Thus the Muslims are the largest segment of the traditional (mostly low skill based artisanal) sector

workforce in India and they are trapped in low productivity occupations. Muslim workers relative of other communities excepting the HUCs are efficient when employed in the modern sector services compared with those who are trapped in the traditional services sector. It is in this sector, therefore, that the government must think to initiate programs backed with technological up-gradation while ensuring a slow transformation of the workforce from the traditional to modern services. Programs promoting private initiatives for skill formation and modernized production system must to be undertaken by the state governments. Further financial incentives and access to credit from the Indian public and private banking networks have to be put in place.

Fig 15: Traditional Services: Share of workers in total workforce and total workforce of services sector

Figure 15

Educational Interaction with SRCs: Since the structure of GDP is highly varying across the two major variables viz. Socio-religious groups and education, it is also, to a certain level, of utmost importance to understand the variations in one variable (that is education) across the another (social) variable (that is Socio-religious groups) in the present context.

Fig 16: SRC-wise distribution of populations by levels of education
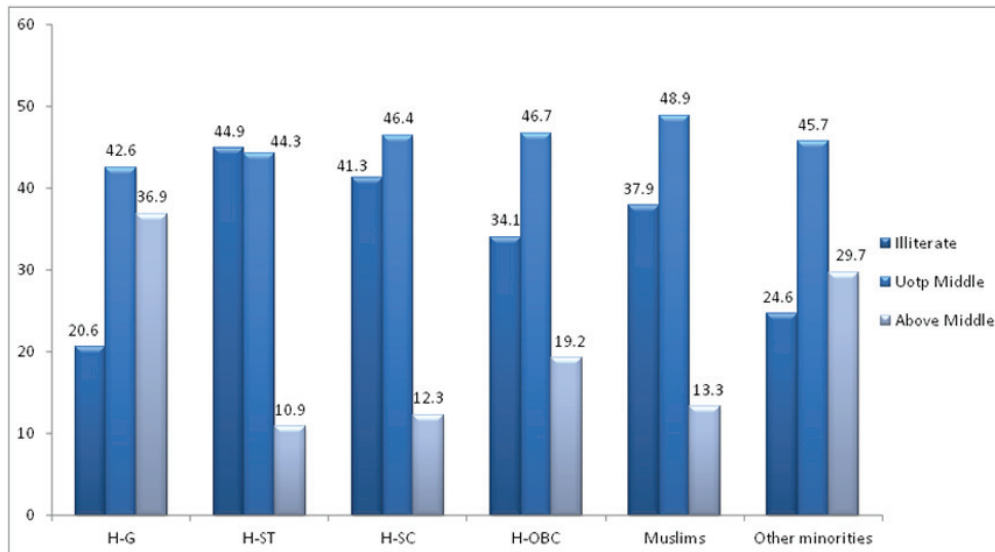
Figure 16

Information on levels of highest educational attainment for different socio-religious groups are presented in Figure 16. It is established through decades of research that low educational attainment is a major hurdle faced by India (and also by most of the world's developing and under developed nations) in the process of sustainable development. But the situation is ever severer for the disadvantaged groups like Hindu-SCs/STs/OBCs and Muslims. Hardly 11 per cent of the Hindu-STs are above middle class pass, followed by Hindu-SCs (12.3 per cent), Muslims (13.3 per cent) and Hindu-OBCs (19.2 per cent). However, comparatively Hindu- Generals have the highest level of education – over 37 per cent at levels above middle class followed by the Other Minorities (about 30 per cent). An in-depth analysis in order and research should be carried out for understanding the inequality and inclusiveness in the growth process of India. A brief analysis on this is presented by the following in the following paragraph.

In this context this analysis suggests that, even after attaining a certain level of education; the disadvantaged communities show a lower level of efficiency and hence lower level of development. The efficiency quotients estimated for different communities at different levels of education suggests high variation. For example, the Other Minorities and Hindu- general sections of the population are at the top in the list at each level of education. Efficiency of the two top communities are followed by Muslims, Hindu-OBCs and Hindu-SCs/STs at each level of education. This in a way opens doors to further research to answering why the educational attainment also do not aid equally in the development of each community equally. Why the Hindu-generals and Other Minorities show higher level of efficiency leading to higher levels economic and social development (Figure 17) compared with the same level of educated from the others deprived communities. The detailed efficiency quotients and per worker rupee value (GDP) are given in Table 1 and Table 2 at different levels of education and for different Socio-religious communities.

However, a unique feature of the Muslim community which is consistent across different periods has been the fact, even at the lower levels of education and even if they are illiterate their relatively contribution is comparable or even better than the all other communities in India. There is a strong suggestion to the fact that access to higher education and skills for the Muslims in fact consistently contributes to GDP with greatest levels of efficiency. They are the most productive, although at very high levels of education they sustain high levels next only to the H-General and the Other Minority categories.

Fig 17: Efficiency Coefficients of SRCs by levels of education
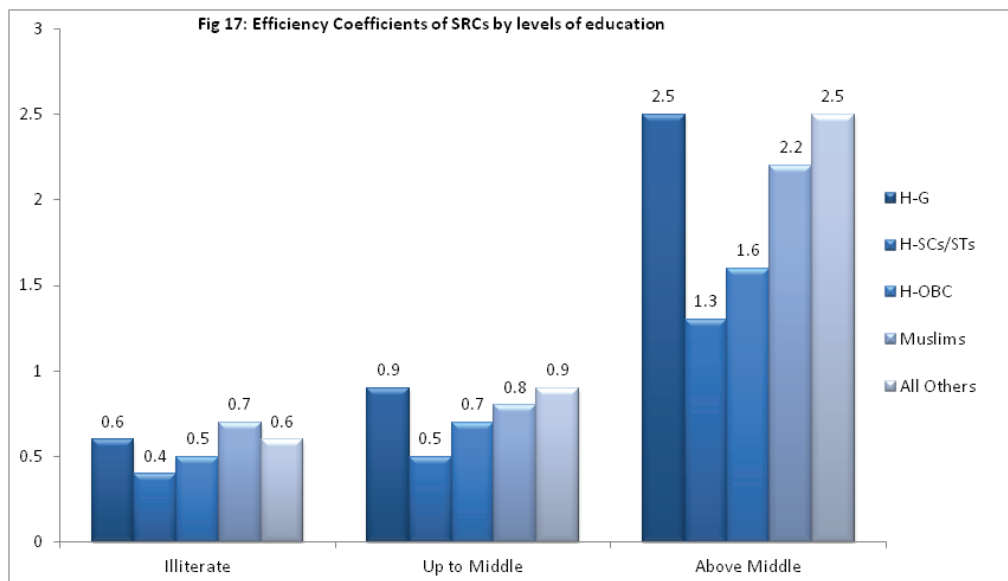

Figure 17

Discussion

The above analysis highlights the following: The Hindu-General population is the driving force of the economic growth thus far and their efficiency quotient has been high in terms of the total economy. . While Hindu-General are the frontrunners in efficiency quotient in the modern services sector, the differentials in other sectors is much lower. This provides us with strong signals as to how India's GDP can be sustained say at 7-8 percent, or increased to 10 to 12 % per annum. The Hindu-OBCs, the Hindu-SCs/STs and Muslims would contribute at higher levels of efficiency if provided technical education and opportunities to participate in modern services and industrial activities. The levels of higher education amongst the dalits, Muslims and Hindu-OBCs must be immediately raised through multiple policies and public action.

How should the share of SCs/STs, Muslims and Hindu-OBCs be increased in various sectors of the Indian economy. (a) Firstly, all these communities must be encouraged to improve their education at the elementary, matriculate and graduation levels. This can be done through a combination of affirmative actions favoring these communities. Regular, schools and colleges must be provided near the community living spaces, the teacher profile must be altered, especially at lower levels of education, and incentives offered to girls and the poorest of the poor. At the higher and technical levels of education, the current system of reservations can be extended to make entry into the educational system easier without compromising standards that are required for higher education. No country in the world has developed using only first and second rank achievers! What is needed is an improvement in the efficiency quotient and there is strong evidence that this need not be restricted to the upper castes in India. The question of reservations or quotas has to be understood differently in the case of higher and technical education and specialized employment. In the case of education, reservation only assists entry into the educational institution but the final assessment benchmarks are fixed. Thus while one can expect a lower success rate amongst those admitted on quotas, the system does not lower the standards of the educational system as a whole. Reservations can be based on an increased number of seats supported by enhanced hard and software and infrastructure. So far as employment is concerned, reservations favouring Hindu-SCs/STs, Muslims and Hindu-OBCs will help to find an adequate number of teachers, professors, doctors, engineers and scientists who would stay put in the country and might even be willing to spread out across the vast Indian hinterland. The efficiency coefficients and per capita per annum contribution to the GDP of different SRCs are given in the following tables (Table 1 and Table 2):

Table 1: Efficiency Quotients (EQ*)						
	Agriculture	Industries	Modern Services	Traditional Services	All Services	All Sectors
Illiterate	0.8	0.7	0.4	0.6	0.6	0.5
Below Primary	0.9	0.9	0.8	0.6	0.6	0.6
Primary	0.9	0.8	0.5	0.7	0.6	0.7
Middle	1.1	0.9	0.6	0.8	0.7	0.8
Secondary	1.2	1.1	1.0	1.1	1.1	1.3
Higher Secondary	1.3	1.3	0.9	1.4	1.2	1.6
Graduate & above	2.0	2.5	1.2	2.6	1.7	3.1
Hindu – General	1.3	1.8	1.2	1.5	1.4	1.7
Hindu – OBCs	1.0	0.9	0.9	0.9	0.9	0.8
Hindu – SCs/STs	0.7	0.7	0.8	0.6	0.7	0.6
Muslims	1.1	0.8	1.1	0.9	0.8	1.0
All Others	1.7	1.5	1.1	1.1	1.2	1.4
Hindu– General	Illiterate	1.0	0.9	0.4	0.7	0.6	0.6
	Up to Middle	1.3	1.0	0.7	1.0	0.8	0.9
	Above Middle	1.7	2.5	1.3	1.6	1.7	2.5
Hindu – OBCs	Illiterate	0.9	0.6	0.3	0.7	0.5	0.5
	Up to Middle	1.0	0.8	0.5	0.8	0.6	0.7
	Above Middle	1.2	1.4	1.0	1.2	1.2	1.6
Hindu – SCs/STs	Illiterate	0.8	0.5	0.3	0.5	0.4	0.4
	Up to Middle	0.7	0.7	0.5	0.6	0.5	0.5
	Above Middle	0.8	1.0	1.2	0.8	1.2	1.3
Muslims	Illiterate	0.9	0.7	0.3	0.7	0.5	0.7
	Up to Middle	1.1	0.7	0.7	0.8	0.6	0.8
	Above Middle	1.4	1.6	1.3	1.6	1.5	2.2
All Others	Illiterate	1.1	0.7	0.5	0.6	0.5	0.6
	Up to Middle	1.9	0.9	0.8	0.7	0.6	0.9
	Above Middle	2.1	2.8	1.3	1.2	1.5	2.5

*= Share of GDP divided by share of labour

Table 2: Per Capita GDP (Rupee value per annum in '000 Rupees)		Agriculture	Industries	Modern Services	Traditional Services	All Services	All Sectors
Illiterate		48.5	125.3	152.3	156.2	155.7	79.1
Below Primary		52.9	150.1	314.0	157.8	178.8	98.7
Primary		53.8	153.9	224.0	164.1	172.2	104.3
Middle		63.7	174.1	270.1	203.4	216.1	132.2
Secondary		69.7	254.0	438.2	300.5	341.2	211.3
Higher Secondary		72.6	361.7	385.6	355.1	367.4	256.5
Graduate & above		114.2	550.4	514.7	674.6	563.3	498.2
Hindu – General		76.2	368.0	485.7	390.0	430.8	270.6
Hindu – OBCs		55.8	185.8	361.4	232.3	267.6	135.0
Hindu – SCs/STs		42.6	134.0	323.8	166.6	216.4	95.2
Muslims		60.3	173.2	477.4	221.0	260.3	167.2
All Others		97.7	309.9	447.8	291.6	364.3	231.6
Hindu– General	Illiterate	54.9	178.8	197.6	169.2	174.0	92.0
	Up to Middle	72.3	202.8	325.8	235.2	253.9	147.4
	Above Middle	97.6	524.5	516.9	517.5	517.2	408.1
Hindu – OBCs	Illiterate	49.8	129.6	137.7	170.8	167.2	79.2
	Up to Middle	55.7	166.7	249.8	174.7	184.3	109.4
	Above Middle	70.0	288.5	407.9	352.3	378.0	247.8
Hindu – SCs/STs	Illiterate	43.6	105.2	126.7	135.7	134.2	66.7
	Up to Middle	40.8	139.1	199.8	142.6	155.2	85.5
	Above Middle	44.4	203.9	434.5	271.1	363.4	207.4
Muslims	Illiterate	53.1	145.1	177.2	156.2	157.6	106.9
	Up to Middle	62.2	144.8	376.0	176.6	190.4	134.1
	Above Middle	80.4	324.5	553.9	413.3	465.4	357.6
All Others	Illiterate	64.3	142.0	217.7	144.8	164.8	95.7
	Up to Middle	106.7	187.0	241.1	193.6	209.1	148.6
	Above Middle	121.8	576.5	520.1	400.9	467.8	401.0

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Appendix

Limitations of the Study

Due to the non-availability of data on the rate of return to capital, the consumption expenditure of self-employed reported individuals has been used to distribute the capital income. Here, consumption expenditure is assumed to be the proxy for their incomes and savings and the capital part of the GDP is distributed accordingly. Methodology provided in this paper needs improvement, however, it provide insight to the contribution made by various SRCs to the economy and calls for affirmative action to be taken for equitable growth.

Technical Note: Selection of Sectors

In this exercise, sixty-one sectors of the Indian Economy are identified for which data on the aggregate GDP from National Accounts Statistics, Employment, Weekly wage earnings and the Monthly Consumption Expenditure by SRCs from NSSO are available. As per the objective of the study, GDP data with its breakup into wage and non-wage incomes is required. CSO provides GDP data for 61 sectors of the Indian economy but the GDP breakups into wage and non-wage income only for the broad and main sectors. The sectors for which data on GDP and its breakup into wage and non-wage is provided in the National Accounts Statistics are as follows:

Statement I: Broad and Main Sectors of the Indian Economy

I.	Agriculture, Forestry & Fishing
1.	Agriculture
2.	Forestry & Logging
3.	Fishing
II.	Mining & Quarrying
III.	Manufacturing
IV.	Electricity, Gas & Water Supply
V.	Construction
VI.	Trade, Hotels & Restaurant
4.	Trade
5.	Hotels & Restaurants
VII.	Transport, Storage & Communication
6.	Railways
7.	Transport by Other Means
8.	Storage
9.	Communication
VIII.	Financing, Insurance, Real Estate & Business Services
10.	Banking & Insurance
11.	Real Estate, Ownership of Dwellings & Business Services
IX.	Community, Social & Personal Services
12.	Public Administration & Defense
13.	her Services

GDP data along with its wage and non-wage component for all the above sectors is available in the National Accounts Statistics, CSO (statement 76.1, NAS-2011). The first step is to decompose the GDP data into wage and non-wage Incomes for the following sub-sectors for which only GDP data is available.

Statement II: Sub-sectors of the Indian Economy for which breakup of GDP into wage and non-wage is not available

Manufacturing:

1   Production, processing and preservation of meat, fish, fruits, vegetables and oils
2   Manufacturing of dairy products
3   Manufacturing of grain mill products
4   Manufacturing of other food products
5   Manufacturing of beverages
6   Manufacturing of tobacco products
7   Spinning, weaving and finishing of textiles etc.
8   Wearing apparel
9   Leather & fur products
10   Wood and wood products
11   Furniture
12   Paper and printing etc
13   Rubber, petroleum products etc.
14   Chemical and chemical products
15   Non-metallic products
16   Basic metals
17   Recycling
18   Metal products and machinery
19   Electrical machinery
20   Other manufacturing
21   Transport equipment

Electricity, Gas & Water Supply:

22   Electricity
23   Gas
24   Water Supply

Trade, Hotel & Restaurants:

25   Maintenance and Repair of Motor Vehicles
26   Sale of Motor Vehicles
27   Repair of Personal and Household Goods
28   Wholesale and Retail Trade

Transport, Storage & Communication:

29   Road Transport
30   Water Transport
31   Air Transport
32   Services Incidental to Transport

Banking & Insurance

33   Banking
34   Insurance

Financing, Insurance, Real Estate and Business Services:

35   Dwelling

36   Real Estate

37   Renting of Machinery, Equipment

38   Computer and Related Activities

39   Legal Services

40   Accounting and Book Keeping

41   Research and Development

Community, Social and Personal Services:

42   Education

43   Coaching Centre

44   Medical & Health

45   Membership Organizations

46   Private Households with Employed Persons

47   Washing & Cleaning of Textiles

48   Hair Dressing and other Beauty Treatment

49   Custom Tailoring

50   Funeral and Related Activities

Decomposition of GDP into Wage and Non-Wage Income

In the first step, the contribution of each of these sub-sectors to GDP is broken down into wage and non-wage incomes using data from National Accounts Statistics.

For all the nine broad sectors and for 13 major sectors as listed in Statement I, the National Accounts Statistics provides estimates of both GDP originating in the broad sector/main sector and wage payments made in that sector. Using the basic national income identity that the sum of all factor payments is identical to the value added, it is an easy task to derive the non-wage (capital) income in each sub-sector. That is,
GDP in sub-sector – Wage payments in sub-sector = Non-wage income in sub-sector.

For the decomposition of GDP of all the sub-sectors (51) for which the wage component is not available in the NAS, the wage distribution is extracted from NSSO 66th Round data. NSSO provides information on weekly wages paid to workers in the different sectors/industries of the economy. Applying this structure to the controlled sectoral wages of the respective group/sectors as given in the National Accounts Statistics will give the wages for all the sub-sectors. (Step I).

Based on national income identities, the wage payments in each sub-sector are then subtracted from the GDP originating in that sector to get the non-wage (or capital) income.

After decomposing the GDP into wage and capital incomes, the next step was to decompose the capital income into public and private. This has been done because the operating surplus of the public sector does not accrue to households. For all the broad 9 groups and 13 main sectors, data on the operating surplus of the public sector is taken from the NAS. The structure of total GDP has been used to disaggregate the sectoral operating surplus within the major sectors. This sub-sectoral operating surplus of the public sector is subtracted from the sub-sectoral total non-wage income to get the private non-wage income.

Operating Surplus of Public Sector	210781
Total GDP	6133230
GDP Distributed among Socio-Religious Community	5922449
Wage	1887092
Non-wage	4035357

The total GDP distributed across different SRCs is Rs. 5922449 crore, 96.6 per cent of the total GDP. Wage component of GDP is Rs. 1887092crores, which is 32 per cent of GDP and the Non-wage Income is Rs. 4035357 crore, 68 per cent of GDP.

Share of Socio-Religious Communities in GDP of each sector and sub-sector

After decomposing the sectoral and sub-sectoral GDP into wage and capital incomes, the next step was to distribute these incomes across different SRCs. The NSSO 66th Round Survey on Employment and Unemployment provides individual level information on wage and salary earnings and household level monthly consumption expenditure in different sectors of the economy as per the National Industrial Classification (NIC-2004) codes. These data can be decomposed according to SRCs as well. These NICs (consisting of about 943 sectors) are aggregated into 61 sectors that are the focus of this study. Using this data set, the percentage share of each SRC in the income (wages and salaries) and the household monthly consumption expenditure of individuals who reported themselves as self-employed in the sub-sectors identified earlier was estimated.

Non-wage income is the major component of GDP (68 per cent) and there is no data available on the rate of return to different individuals in different sectors. The NSSO provides information on household monthly consumption expenditure and the occupation (wage earners, salary earners and self-employed) of all individuals engaged in different sectors of the economy. It is assumed that the higher the consumption expenditure the higher will be the share in capital income.

Combining these percentages (of wage and salary earnings and household monthly consumption expenditure) and the wage and non-wage income estimated earlier, the share of each the SRC in the wage and non-wage income of the respective sector is obtained in absolute terms.

Wage payments accruing to SRC = % share in wages and salaries of that community estimated from NSSO survey * Total wage payments in sub-sector estimated in Step 1.

Non-wage income of that SRC is obtained as follows:
Non-wage income accruing to SRC = % share in monthly consumption expenditure of self-employed reported individuals of that community estimated from NSSO survey * Total Non-wage income in sub-sector
Where non-wage Income in that sub-sector = GDP of sub-sector – total wage payments in that sub-sector minus operating surplus of public sector in that sub-sector.

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