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**BOOK REVIEW**

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## Inter-Generational and Inter-Regional Differentials in Higher Level of Education in India<sup>#</sup>

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Abusaleh Shariff\*

### Abstract

I am privileged to deliver the 12th Maulana Abul Kalam Azad Memorial Lecture today on 11 November 2021, which is also his 133<sup>rd</sup> birth anniversary. He has been an epitome of Freedom (Azad) while being a Maulana. True to his name he was a Free Maulana, free from religious romanticism and symbolism, and at the helm of perfect nationalism. Azad, one of the closest confidants of Mahatma Gandhi, organised the Dharasana Satyagraha in 1931, and he believed in the cause of Hindu-Muslim unity while espousing secularism and diversity. In 1956, he presided the 1956 UNESCO General Conference held in Delhi. He catalysed the vision of Pandit Jawaharlal Nehru of 'building modern temples of India' – the largest and apex level educational institutions such as the IIT (Kharagpur) and many universities. It is important to contemplate on many facts of History linked with the ideas and philosophy of Azad which has high relevance and impactful to the formative maturity of democracy in India.

On this solemn occasion I wish to dedicate my analysis and thoughts on 'inter-generational resource transfers,' as reflected by empirical measures of differentials in higher levels of education between the young and the older generation. Data from the National Sample Survey (71st round) of the Government of India are utilised to assess the prospects of reaping the youthful demographic dividends in India. Social inclusivity is found to be affected by the combined effects of base-level differences and interactive effects of geographic regions, gender and place of residence.

Although India is at the verge of getting recognised as a leading global economic powerhouse, its teaming millions of youth and children are at the risk of missing

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# Twelfth Maulana Azad Memorial Lecture, delivered on 11th November 2021 in Webinar at NIEPA, New Delhi.

\* US-India Policy Institute, Washington D. C., Centre for Research and Debates in Development Policy, New Delhi and Bengaluru.

I thank Amit Sharma and Asrar Ahmed in New Delhi and Ilyas Pasha in Bengaluru for excellent data and research assistance.

the reap of the benefits of growth and development. Notwithstanding the reservation quota systems, public policies aiming to create equal opportunity in higher level education are essential and so is the dispensing of knowledge in languages which have international recognition, including English and technology.

First, it is essential to put on record the especially circumstantial situation that Indian is currently facing due to the sudden emergence of the COVID-19 pandemic and its disastrous direct consequences affecting employment, manufacturing and production, trade, agriculture and even self-employment. This essay does not claim to have addressed the full and true impact of the pandemic on the economy as a whole and on higher-level education in particular.

As a new school year gets under way in many countries, the harm caused by the months of closures due to COVID-19 is becoming ever clearer. In the United States of America, primary-age pupils are, on an average, five months behind where they would usually be in mathematics, and four months in reading, according to McKinsey, a premier consultancy company. The damage is almost certainly worse in places such as India and Mexico where the disruption to schooling has been greater (*The Economist*).

Given that the data used in this essay have the reference year of 2014, it is fair to say that this analytical report is valid for the pre-pandemic period and possibly for the future period after the end of the pandemic impact.

Note a major change in the public policy environment due to the emergence of BJP as the ruling party, with a long stint of administration so far. This paper does not attempt to evaluate its policy impact on higher level of education and associated equity due to want of credible data. Hearsay, government supplied departmental (often manufactured) and only inputs based (budgetary allocations) data are not sufficient to assess the nation's educational, economic, and social policy.

## Introduction

India's future accelerated economic development is largely dependent upon the value added by the current and future generations of youthful labour force; and this is termed as the 'demographic dividend (DD)'. The dividend gets generated only if appropriate human development investments are made to enhance the per capita value added by the individual labourer. Given an opportunity, a larger share of working age population (15-64 years) as compared to its non-working population have a potential for a greater economic achievement. Yet, having a favourable demographic age structure does not necessarily guarantee an economic boost for a country, and, as the UNFPA (2018) said, historically there are possibilities of missing this chance. To reap this demographic dividend requires strategic investment decision making in the areas of human development, especially for the high quality education, for creating an access to modern science and technology enabled education, and for creating economic opportunities to employ them. The 'dividend' will be lost if a country's young population is not appropriately educated, healthy and properly skilled. Investing in the youth takes rather a long-term understanding of sustainability of the labour force and economy. Demographic dividend doesn't happen on its own; a well-planned investment strategy is a precondition for tapping the potential of its new technology aligned-youth through the higher levels of education. The Economic Survey 2016-17 forecast that

India is likely to experience a peak in demographic dividend during the 2020s. In a scenario when the world is ageing, the number of young Indians are rising. And yet the question arises: Is India ready to reap this demographic dividend? Is the young population equipped with the required education, health, skills and employment that are essential to benefit from the demographic dividends? According to John Bluedorn, a senior IMF economist, there are new reports about the redundancy of the youth labour in India (Youth Inactivity Highest in India among Emerging Markets, 2019) and about the increasing unemployment rates to levels hitherto not recorded in Independent India.

### **The Catalytic Agent**

Achieving a higher-level of education (HLE) degree, especially one that is technical in nature, is desired and cherished by all youth and revelled by parents and community. The rates of both market returns (rupee wage) and non-market returns (life-enriching human development) increase with the increasing levels of education, made possible due to growing Indian economy and demands of the globalising world. The sectors of the economy showing vibrancy and recording near-double digit growth (notwithstanding a fall during 2012-13 and 2019-21) can perform mainly through the support of two important inputs, i.e., higher levels of human (educated) resource, and better adaptation and assimilation of technology through physical capital investment. It is critical, therefore, that HLE becomes accessible to all citizens across India, irrespective of the economic, social, linguistic and regional differentiations. This context is appropriate to invoke the constitutional provisions enshrined in Article 15 which direct the governments to create equal opportunity and equity in access to all levels of education, including the higher-level modern education.

### **Importance of Higher Levels of Education (HLE) in Modern Sector Employment**

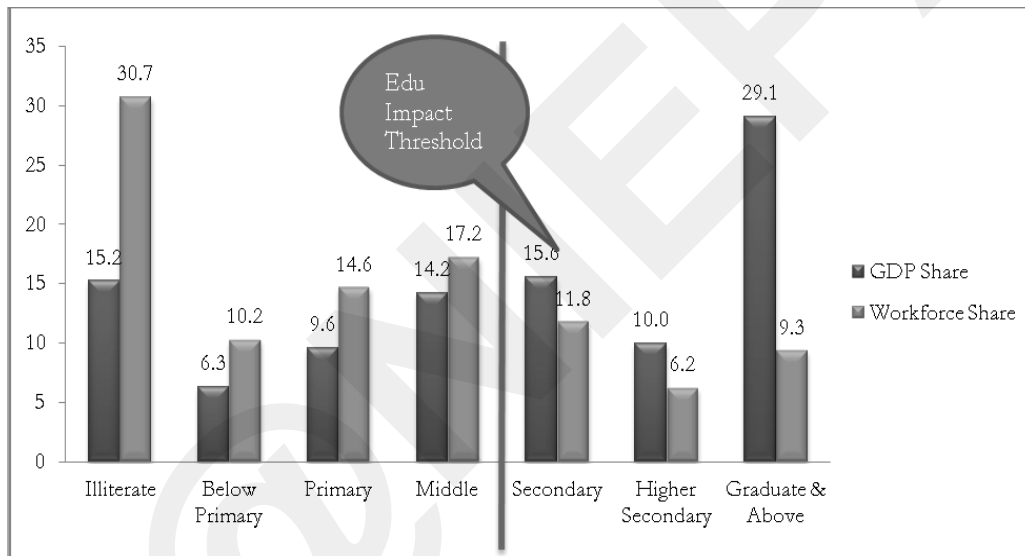
Decades of research across the world has established the fact that education is the foremost driving force for economic and social development. The economic development of an individual (Becker, 1964; Mincer, 1974) as well as a nation (Schultz, 1961; Barro, 1991; Barro and Sala-i-Martin, 1995; Lucas, 1998) is highly correlated with the levels of education. Generally, the mean years of schooling of adults, an indicator of the pool of education in a country, is as high as 13.3 years in the USA, (<http://hdrstats.undp.org/en/countries/profiles/USA.html>) and just 4.4 years in India (<http://hdrstats.undp.org/en/countries/profiles/IND.html>). Further, the proportion of age-specific population having enrolled into a college would be substantially high in the developed countries. In 2009, over 28 per cent population reported having obtained a bachelor's degree or higher in the USA. Among people in the age group 25 to 34 years, a higher percentage of women (about 35 per cent) reported having a bachelor's degree or higher in comparison with 27 per cent of men (Ryan et al, 2012).

India and China are large and the fastest growing economies in the world, and one finds substantial growth in HLE in both countries (Altbach, 2009). The HLE enrolment in India is about 10 per cent of university-age population while China enrolls about 22 per cent. In absolute numbers China enrolls a record 27 million post-higher secondary level students and India's 13 million enrolment ranks third. Since the early 1990s, China's post-secondary

enrolments have grown from 5 million to 27 million, while India has expanded from 5 million to only 13 million. The growth of HLE in India is partly dependent upon the private sector and expansion of distant education although the quality of higher education will be driven by enhanced financial support and effective quality-assurance system, both of which are currently missing in India (Altbach, 2009).

This broad association between the higher levels of education and development status of a nation should essentially get reflected into the education and skills which impact on the contribution of specified economic sectors and to the national GDP. In case of India, my recent analysis highlights these associations between the share of labour force according to levels of education and their collective contribution to the GDP (See Figure 1.)

FIGURE 1  
Shares in GDP and Workforce by Level of Education



It is clear from Figure 1 that at the all-India level, the share of illiterate workforce is 30.7 per cent which is twice their share of 15.2 per cent contribution to the GDP. On the other extreme, only about 9 per cent of the HLE (graduates and above) contribute over 29 per cent of the GDP. This adequately demonstrates the power of education which enhances productivity and economic value, both at the individual level and when aggregated at the level of a nation. Note that up to middle class level of education, the shares in workforce are higher than the respective shares in GDP. Once this *threshold of education level* is crossed, the per cent share in GDP supersedes the per cent share in workforce and this difference increases sharply with the increases in the level of education. Estimates of the efficiency quotients – that is, the ratio of share in GDP and the share in workforce – suggest that the impact of education on GDP is prominent, and they are highly correlated. But the cause of concern is the fact that over 45 per cent of all labour force’s efficiency is less that even due to lack of appropriate higher levels of education and associated skills.



The growth in household income or income per capita occurs due to a consistent growth in labour productivity and the number of able-bodied workers within the household. An average of this labour productivity at the level of the nation gives national-level per capita income. Although the growth in other Asian economies has occurred due to a growth in the capital per worker and total factor productivity (GOI, 2013), given a high population base, a balanced growth in India demands a considerable contribution through human capital formation which, as this paper argues, is a function of HLE.

### **Inclusive HLE Promotes Equity**

Ensuring equity and reducing inequality in the Indian society is an important objective of the democratic policy and constitutional resolve. India is a highly diverse society in terms of caste, religion, language, geographic region, place of residence (such as rural and urban areas) and so on, and most of the deprivations such as poverty, illiteracy, ill-health and low productivity register high correlations with these attributes. It is but natural that any study of diversity and development must identify the economic disadvantages associated with such attributes and also assess the role education system plays in contributing to India's inclusive economic growth (GOI, 2006). Further, providing education to the young has come to be known as the best *mechanism of inter-generational resource transfer*. Education has evolved as a new type of asset as opposed to the conventional assets such as land, cash, gold and so on. Thus, the new types of bequeaths are providing children and the young with high-quality education, skills and socio-political empowerment.

Given the importance of HLE in improving human lives, both at the level of individual and household as well as at the aggregate level of state or nation, the author intends to highlight the differentials in achievements as well as opportunities amongst various regions and SRCs. The paper provides an empirical base to draw lessons for promoting inclusive development in HLE provisioning according to regions in India.

### **Data and Methods**

This is an empirical analysis intended to facilitate and propagate the tradition of 'evidence-based policy making.' The analysis uses the National Sample Survey data which provide information for a number of household-level economic, social and educational parameters. The NSSO surveys are undertaken frequently, most often on an annual basis. On certain occasions, there are specially focussed surveys such as on migration, health and education.

Data from the 71st round of NSSO (2014) survey, which had a focus on 'Social Consumption namely Education and Health,' is used to highlight the levels and differentials in higher levels of education in this analysis. Data from a similar survey – 64th round of NSSO for an earlier reference year of 2007-08, have also been used for highlighting the changes over time wherever possible. NSSO surveys used large and robust state and national level sample sizes, and the estimates and statistics presented below are valid for the reference years associated with them.

For the purposes of this paper, two distinct types of age categories were created so as to estimate the achievements at higher levels of education. These are the achievement levels amongst the 22 to 35 years old and those who are 36 years and older: with the first

representing the current generation pursuing education and the latter, a generation earlier. An aggregation of these two is considered as current stock for the purposes of this analysis. While this analysis intends to highlight the differentials at the higher levels of education between rural and urban areas and between men and women, another noteworthy differentiation investigated is according to socio-religious community (SRC) categories. Research and analysis based on caste and religion is not very popular in India, excepting a focus on the estimates for the SCs and STs. The SRC categorisation used in the 2004-06 by the PMO's High Level Committee on social, economic and educational situation of the Muslim community of India (also known as Sachar Committee) is used in this analysis (GOI, 2006). Given the distribution and spread of various communities across India and its many states, as well as keeping the statistical fact of sample size and robustness of the estimates in mind, exclusive SRC groupings are created. The categorisation was based on a combination of the commonly recognised social identities and empirical measurability that yields robust estimates. Note also that all SRC identification is based on self-reported information during the NSSO surveys, with the exception that no SC category was feasible for those reporting Muslim or Christian as their religious affiliation. Once the declared religion was Muslim or Christian, the subsequent question as to whether the respondent was also a SC became 'not applicable' by design.

The socio-religious categories used in this analysis were as below:

Hindu - SCs/STs together

Hindu - Other Backward Classes (OBCs)

Hindu-Upper Castes/ Hindu Others / Hindu General

Muslim – (all Muslims)

All Others/Other Minorities

## Broader education profile of the youth in India

A large body of research establishes the wide-ranging social and economic benefits of literacy and education that accrue to individuals, households, and the larger society (Caldwell, 1976; Birdsall, 2001; Schultz, 1988). The benefits of expanding literacy and educational opportunities for girls and women through increase in both market returns (money income) and non-market returns (gains in human development) are also well established since long (Psacharopoulos, 1994).

But in India, the social group differences in enrolment are striking (Sachar Report, 2006). SCs, STs and Muslim children are far less likely to enrol in school and are slightly more likely to drop out than others. It is particularly worrisome to note that Muslim children are as disadvantaged as Dalit and Adivasi children who are documented to be at the margins for centuries. Note that little attention in India has been paid to religious background as a source of educational disadvantage. There is wide divergence in the three R's (reading, writing, and arithmetic) by social and religious background – children from all above cited communities falling behind. Not surprisingly, this educational deficiency is reflected in lower access to salaried jobs among these communities (Shariff, 2016; Desai, *et al*, 2010; Basant and Sen, 2010; Basant and Sen, 2014).

It is startling to find that compared to the respective share in 15-29-year population (see total of the last two columns), the SCs/STs and Muslims have proportionately higher illiteracy. Forty per cent of SC/ST labour is illiterate compared with their share in population on only 28 per cent. Similar, almost one-fifth all illiterate labour force is Muslims while their share in the workforce is 14.5 per cent.

TABLE 1

**Education Profile of Youth (15-29 Years) Population by Socio-Religious Groups**

<i>Social Group</i>	<i>Illiterate</i>		<i>Below Secondary</i>		<i>Secondary</i>		<i>Higher Secondary</i>		<i>Above Higher Secondary</i>		<i>Total</i>	
	<i>2011</i>	<i>2014</i>	<i>2011</i>	<i>2014</i>	<i>2011</i>	<i>2014</i>	<i>2011</i>	<i>2014</i>	<i>2011</i>	<i>2014</i>	<i>2011</i>	<i>2014</i>
SCs/STs	40.1	40	32.6	35.9	22.4	28.4	19.7	19	14.2	15.1	27.8	27.1
OBCs	33.6	31.3	34.9	29.2	39.9	33.9	37.6	36.7	36.1	34.9	36.2	33.9
Muslim	19.8	20.2	16.9	23.1	12.6	15.3	9.8	9.8	7.5	8.2	14.5	14.6
All Others	6.5	8.5	15.6	11.8	25.1	22.4	32.9	34.5	42.3	41.7	21.5	24.4
Total	100	100	100	100	100	100	100	100	100	100	100	100

*Source:* Author's calculations using NSS 68<sup>th</sup> round (2011) and 71<sup>st</sup> round (2014) data.

*Note:* All others also include 'Hindu Others.'

Let us compare their respective shares in the educational category 'above higher secondary'. Only 14/15 per cent of SC/ST and 7.5/8.2 per cent of Muslims labour force is educated above higher secondary level; compared to 42 per cent of 'all others' which is disproportionately larger than their share of 22 per cent in labour force.

It is such a large disproportionate representation in higher level education and associated skill formation which is hurting the excluded SRCs, namely the SC/STs and the Muslims. There is a parity in education for the OBC category. Such a puzzling disparity also affects the ability of the Indian economy to reap the benefits of demographic dividends and cause a huge social inequity and disparity in the income levels.

## Inter-Generational Differentials in High-Level Education

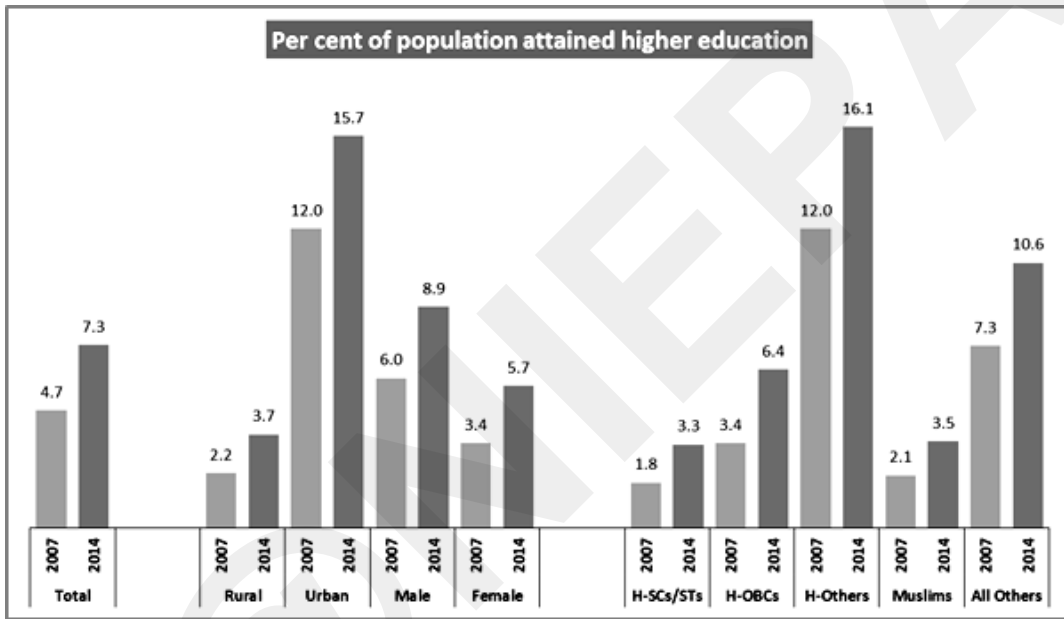
### Current Stock

Overall, 7.3 per cent of all population (all ages) completed post-higher secondary education in 2014; this was only 4.7 per cent in 2007. But there is a large gap in the attainment levels in higher-level education between rural and urban areas, which has increased over time. Just above 2 per cent of the rural population was educated up to a level higher than secondary as compared with 12 per cent in the urban parts of India in 2007; and these levels are 3.7 and 15.7 percent in 2014 (Figure 2). There clearly is an urban bias in access to higher-level education; it is also that education-linked jobs are concentrated in urban areas.

There is also a huge gender gap in attainment of higher-level education which is not narrowing over time. While the achievement levels were 6 per cent for male population it was just 3.4 per cent of the female population in 2007; but differentials persists even when these levels have improved for both at 8.9 for male and 5.7 per cent for female respectively. India must aggressively find ways to eliminated gender bias in providing higher level education to female and equal opportunity to excel both in education and wage employment.

FIGURE 2

**Percentage of Population Which Attained Higher Education**



Source: Author's estimates using NSS 64th round (2007-08) and 71<sup>st</sup> round (2014) survey data

The socio-religious groups display extremely high variation in attainment of HLE, with a low of just about 2 per cent or less for Muslims and H-SCs/STs, through to 12 per cent for Hindu-General, or upper castes. These levels have only marginally improved for SCs/STs and Muslims at 3.3 and 3.5 percent respectively; but it has increased substantially to 16.1 per cent for Hindu upper castes; thus the SRCs differentials are persistently widening. Elsewhere in this paper I confirm this analytical conclusion using a multivariate econometric analysis.

**Inter-Generational Differentials**

There is a minimum age at which most of the population finishes education and receives a higher-level education degree. The general graduation courses are three years long after the post-higher secondary level class, while the professional graduations such as engineering, law, medicine, architecture, take four years or more to finish. Therefore, the minimum age threshold, considering all types of technical and general courses together, for

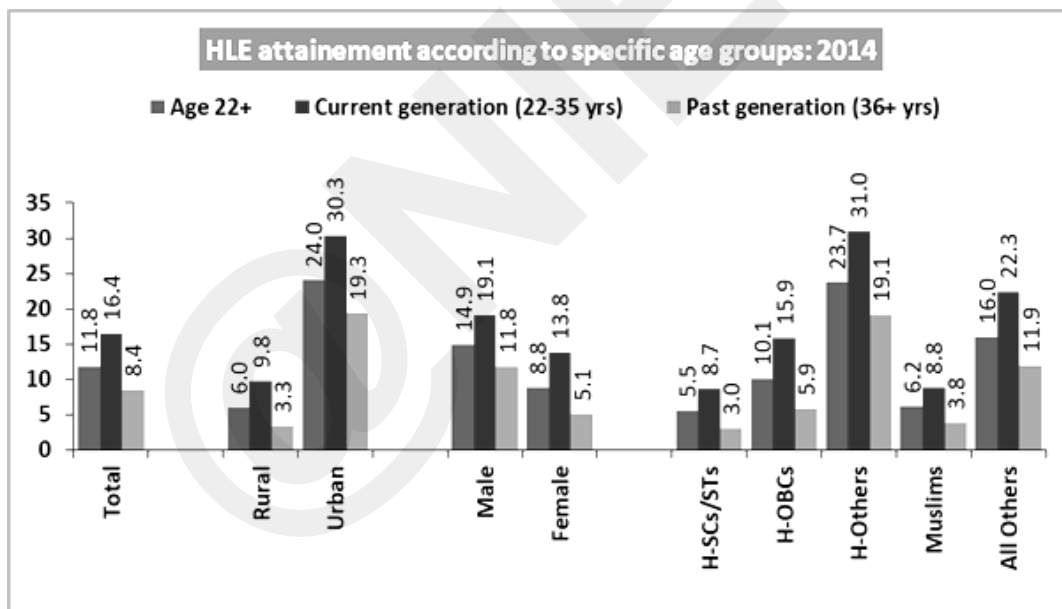
the purposes of this paper is 22 years. Thus, for a more appropriate understanding of the share of population in higher education, all those below the age of 22 years are excluded from the analysis presented below.

The population of 22 years or above is further split into two sub-groups: (1) current generation, defined as those who are aged 22 to 35 years, and (2) a generation before (older generation) – all those who are 36 years and older (Figure 3). A look at these two age-based analytical categories provides robust comparisons in achievements in higher-level education between generations. *One would find in this analysis that while access to HLE is considerably better for the current generation compared with the past, the inter-group variation has increased immensely, which points to growing disparities and inequity.*

All measures in following analysis are per cent having achieved HLE within the respective population sub-group. For example, 6.0 per cent in Figure 3 represents that 6.0 per cent of rural population in the age group 22 years and above which has attained higher education. At all India level, only 11.8 per cent of the total 22 years and above population have attained any degree higher than the higher secondary class as on reference year 2014.

FIGURE 3

#### HLE Attainment according to Specific Age Groups -2014



Source: Author's estimates using NSS 71<sup>st</sup> round (2014) survey data

A better understanding of the differentials can be achieved when the HLE levels are evaluated for the current generation. The younger generation has evolved to be more aware of the value of higher education, and the shares of respective populations in higher education in each socio-religious group as well as in rural, urban, male and female groups have significantly increased over the past generation. Figure 3 indicates a sharp distinction

between the current and past generations with respect to participation in higher education. *At the all-India aggregated level, slightly lower than 12 per cent of 22 and above-aged population has attained HLE.* One can, however, notice that there has been a strong generational impact. For example, the past generation which recorded only 8.4 per cent HLE has doubled to 16.4 per cent of HLE penetration among the current generation. Past generations of rural India had a share of only 6.0 per cent of its population in higher education while the current generation's share is just under 10.0 per cent. In contrast with rural India, higher educational attainment in urban parts of India was high in both the past (19.3 per cent) and current (30.3 per cent) generations.

The shares of respective populations by gender and by socio-religious groups in HLE and changes in the current generation compared to the past generation are also presented here. A close look at the per cent change in shares in higher education over the two generations reveals that current generation females have shown a large growth in their share in higher education (from 5.1 per cent to 13.8 per cent) over the past generation compared with the current generation males (from 11.8 per cent to only 19.1 per cent). *The positive features are that the access and achievements in HLE are inclusive so far as the gender and rural-urban place of residence criteria are evaluated. Yet large differentials persist, thus stressing equity and equality goals of the nation.*

### **HLE Achievements According to Socio-Religious Communities**

A study of the social differentials in access and achievements in HLE is rare in India. Such an analysis was undertaken for the first time at the instance of the Prime Minister of India by the Sachar Committee in 2006. The following analysis by socio-religious communities (SRC) follows the categorisation used by this committee (GOI, 2006). The generational difference in prevalence of HLE varies greatly by the SRCs. The generational change is as high as 190 for the H-SCs/STs (from 3 to 8.7 per cent), 169 for the H-OBCs and 132 per cent for Muslims. Note that all these groups have relatively lower levels of HLE achievement. However, it is 62 per cent and 87 per cent for all other minorities excluding the Muslims. Note that both the high caste Hindus and other minorities have considerably large levels of HLE achievements to begin with. Hence, apart from observing the per cent growth in individual groups, what is also needed is to look at the absolute change in terms of per cent points in shares in higher education for a clearer and more propitiously descriptive picture of the issue under discussion.

It must be pointed out that although large differentials persist between the SRCs, there is a directional change towards equality, as reflected by these data, and in so far as the levels are concerned, although one has to analyse the qualitative differentials to reach robust conclusions about equity.

### **Inter-Regional Analysis of Achievements in HLE**

Given India's vastness and diverse population distribution across its length and breadth, one can understand the gravity of inequity and differentiation in HLE better at the geographically disaggregated units. In the following pages, we analyse the HLE among different sub-groups of the population at regional level. Undertaking a state-level analysis was not statistically feasible due to many insufficient state-level sample sizes. In view of

sample sufficiency, this author created six geographical regions, namely Southern India (SI), Northern India (NI), Western India (WI), Central India (CI), North-Central India (NCI) and North-Eastern India (NEI), clubbing the contiguous states as below. The regional categorisation is presented in Table 2 as well as identified in the map with geographical representation.

TABLE 2

**Regional Categorisation: The State Agglomerations**

<i>Region</i>	<i>States Constituting the Region</i>
Southern India (SI)	Andhra Pradesh, Karnataka, Lakshadweep, Kerala, Tamil Nadu, Pondicherry, Andaman & Nicobar
Northern India (NI)	Jammu & Kashmir, Himachal Pradesh, Punjab, Chandigarh, Uttaranchal, Haryana, Delhi
Western India (WI)	Gujarat, Maharashtra, Goa, Dadra & Nagar Haveli, Daman & Diu
Central India (CI)	Chhattisgarh, Madhya Pradesh, Rajasthan, Jharkhand, Orissa
Northern Central India (Gangetic Central Plain) (NCI)	Uttar Pradesh, Bihar, West Bengal
North Eastern India (NEI)	Sikkim, Arunachal Pradesh, Nagaland, Manipur, Mizoram, Tripura, Meghalaya, Assam

**Differentials according to Regions, Rural/Urban and Gender**

Shares representing in higher-level education for all 22+ year old population as well as for current and past generation according to region, place of residence (rural/urban) and gender are presented in Figure 4 and Figure 5. It is clear that at the regional level, the percentage share of urban total population in higher-level education is higher than that of rural population for both the generations and for the population of 22+ years of age, suggesting a strong urban bias.



Comparison of prevalence in higher education in different regions (Figure 4) over the two generations shows that urban population in Northern India was at the top in both the generations while in the past generation it had second highest prevalence for its rural counterpart which, in current generation, has also made it to the top. Southern India's urban population has improved at the fastest pace, leading the region to showcase the most promising growth in higher level education in comparison with urban parts of all other regions. The inter-generation growth in HLE is fastest in Southern India both for females and males; and the growth has been 270 per cent for females as compared with the previous generation.

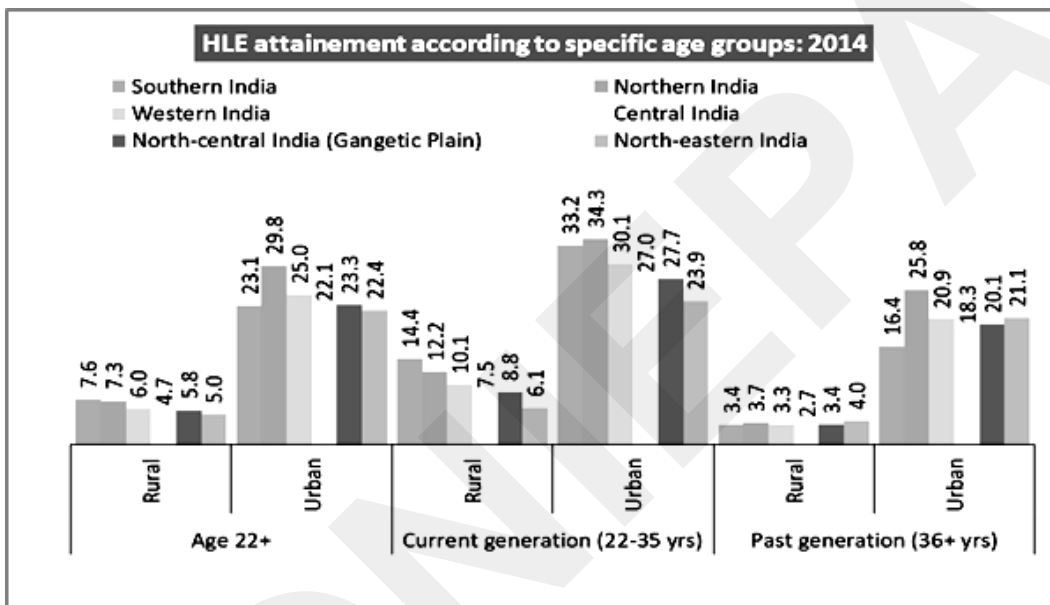
Further, both male and female sections of Northern Indian population have shown the highest participation in HLE, bagging the top position for both the generations (Figure 5). Note that the National Capital Territory of Delhi is part of this region and much of the respective estimates are influenced by its dominant pattern. North-Eastern India, on the other hand, has the least share in higher education as per cent of its population for both the generations and for both the genders. Deep regional differentiation is found when both the



levels and inter-generational improvements are assessed for the North-East, Central Region and Northern Central regions of India. These regions where over 60 per cent of youth population resides are lagging; by not providing opportunities for HLE as well as in motivation and security to enhance the female participation in higher level education.

FIGURE 4

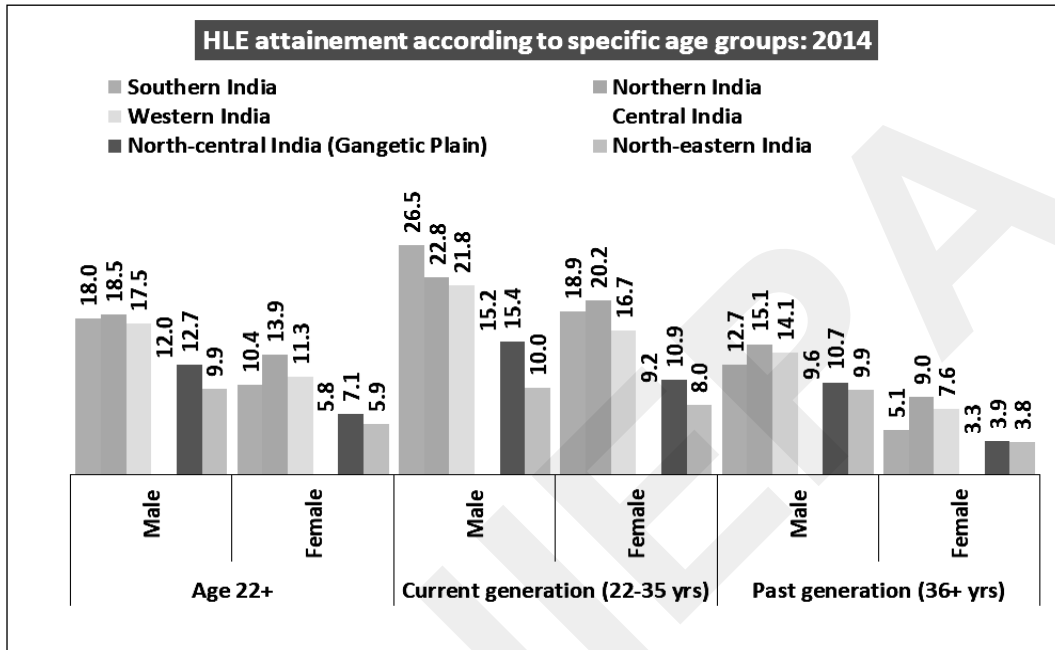
Region-Wise HLE Attainment according to Specific Age Groups - 2014



Source: Author's estimates using NSS 71st round (2014) survey data

FIGURE 5

**Gender-Wise HLE Attainment according to Specific Age Groups - 2014**



Source: Authors' estimates using NSS 71st round (2014) survey data

**Size of Technical Education**

Technical education is generally considered as an add-on or additional dimension of higher level education; often it is received after having achieved a certain level of regular education in the first place. Normally, technical education is preferred to regular educational courses due to higher probability of the technically educated persons getting employed in the modern industrial and services sectors. A person reporting to have secured a degree or diploma in technical education is considered as having achieved HLE for the purposes of this analysis.

From a range of categories of education found in the survey, the author created and redefined higher education categories into technical and non-technical types as given in Table 3 below.

TABLE 3

**Higher Education Categories Used in This Address and Their Concordance  
with the NSSO Categories**

<i>NSSO's 71<sup>st</sup> round survey's higher education category</i>		<i>Higher education category used in this paper</i>
<i>Degree</i>	<i>Subject</i>	
Diploma or certificate (below graduate level)		
Diploma or certificate (graduate and above level)	Agriculture, Medicine, Engineering / Technology or Crafts	Higher Education (Technical)
Graduation level degree courses		
Post-graduation and above level degree courses		
Diploma or certificate (below graduate level)		
Diploma or certificate (graduate and above level)	All Other Subjects	Higher Education (Non-Technical)
Graduation level degree courses		
Post-graduation and above level degree courses		

The following figures (Figures 6 and 7) present the levels of HLE followed by the proportion of those currently enrolled in higher technical education (HTE) as a percentage of total persons enrolled in specified age groups. The share of persons attending technical education is 24 and 42 per cent respectively in rural and urban areas.

These shares are considerably high at 40 and 56 per cent respectively in Southern India, and least and very low in Northeast and the states in the Gangetic Plain. However, the gap between the rural and urban areas is steep in Central region (22 and 45 per cent) followed by the Western regions (26 and 47 per cent). Overall, while 24 per cent of all those in HLE are studying HTE in rural areas, this percentage is 42 per cent in urban India.

FIGURE 6

**Region wise & Sector wise % of Population (currently Enrolled in Education and Aged 22 to 35 years) Attained Higher Education**

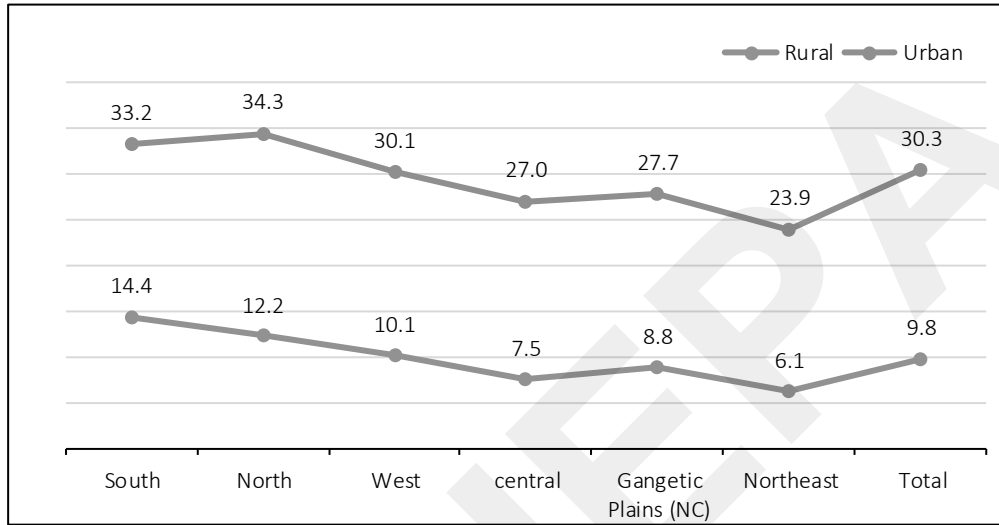
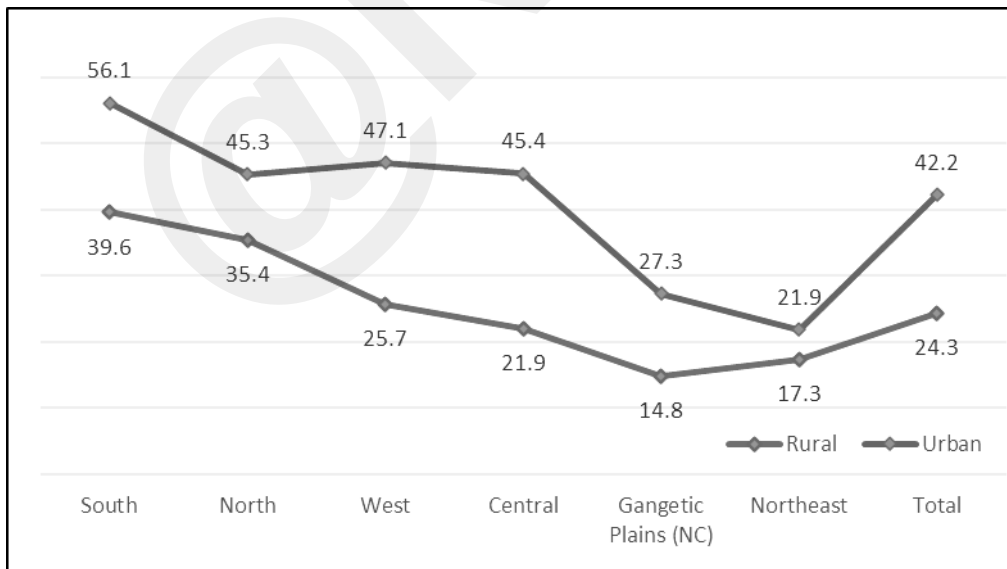


FIGURE 7

**Region wise % of Population (currently Enrolled in Education and Aged 22 to 29 years) Attained Higher Education of Which Technical**



Similar data are presented, by gender, in Figure 8 and Figure 9. The share of persons attaining technical education is 37 per cent for males (out of total males enrolled in higher education) and 26 per cent for females at the level of India. In South India these proportions are (at top) the best at 40 and 53 per cent followed by North and West. The least proportions are found in North-Eastern India and Gangetic Plains. Note also that even regions such as the North and West (unexpectedly) and North Central (expectedly) have shown low penetration of HTE. However, one notices a substantial improvement in HTE penetration in urban-Central region, but this appears to be about non-English based degrees or diplomas.

FIGURE 8

**Region Wise & Gender Wise % of Population (Currently Enrolled in Education and Aged 22 To 35 Years) Attained Higher Education**

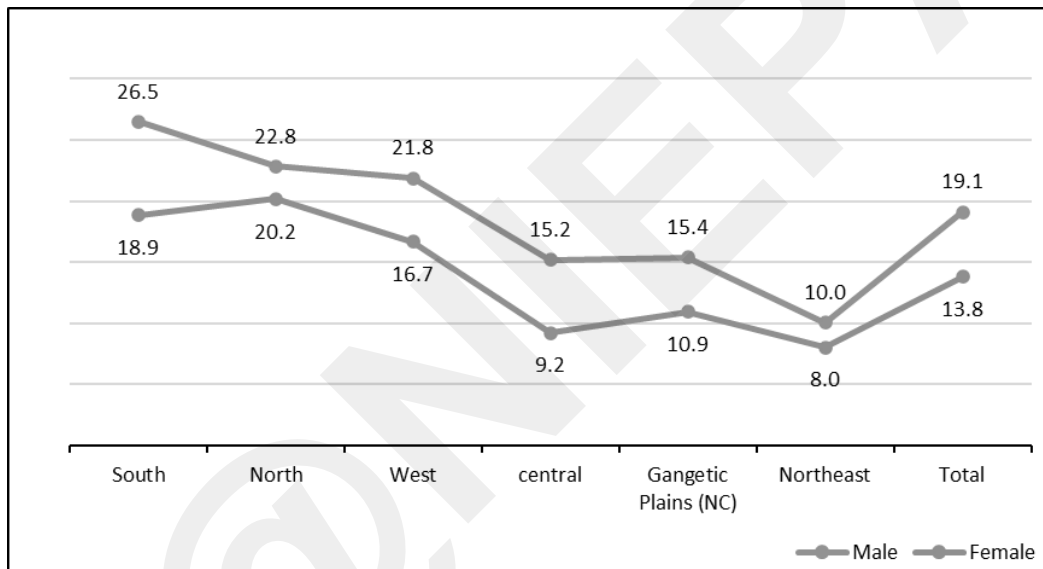


FIGURE 9

**Region Wise & Gender Wise % Of Population (Currently Enrolled in Education and Aged 22 To 29 Years) Attained Higher Education of Which Technical**

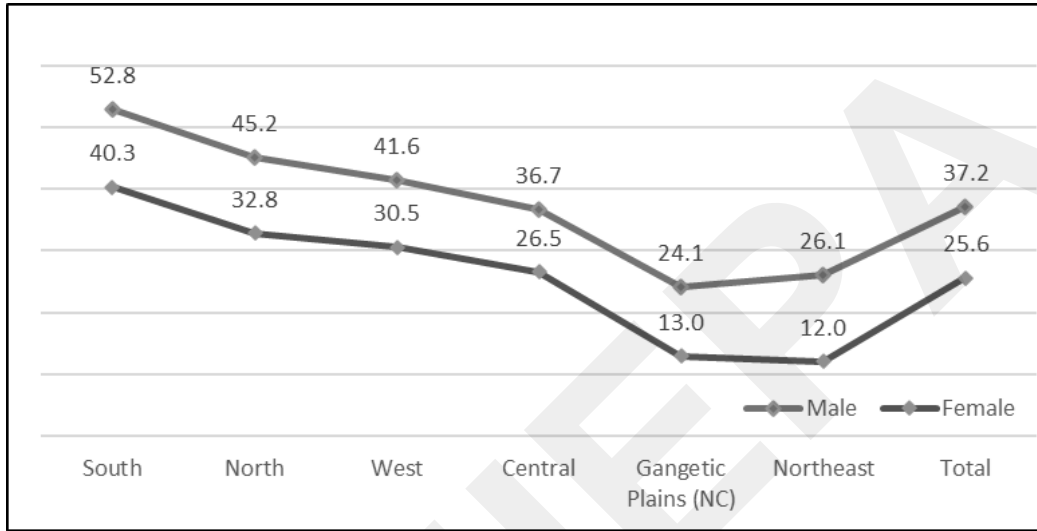
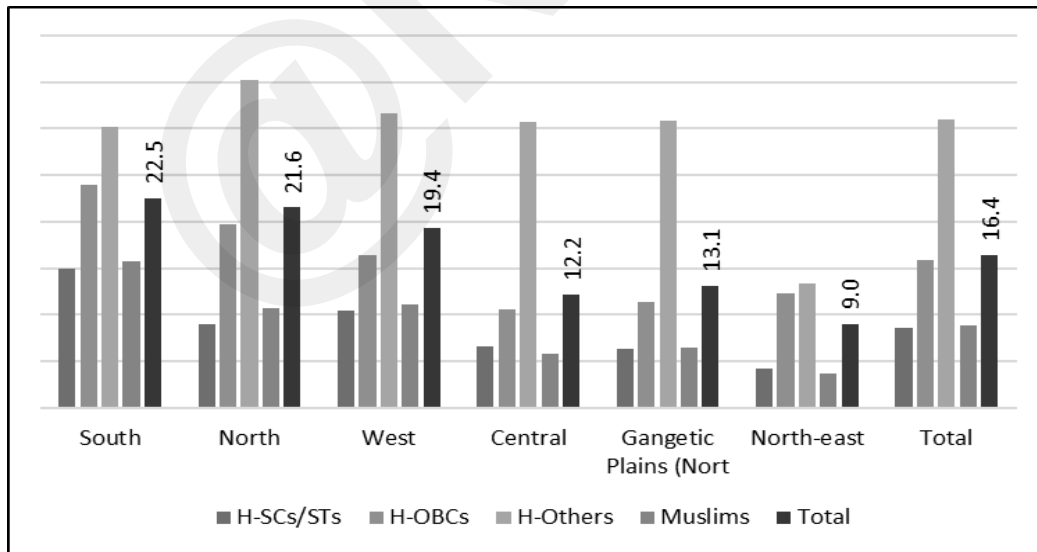


FIGURE 10

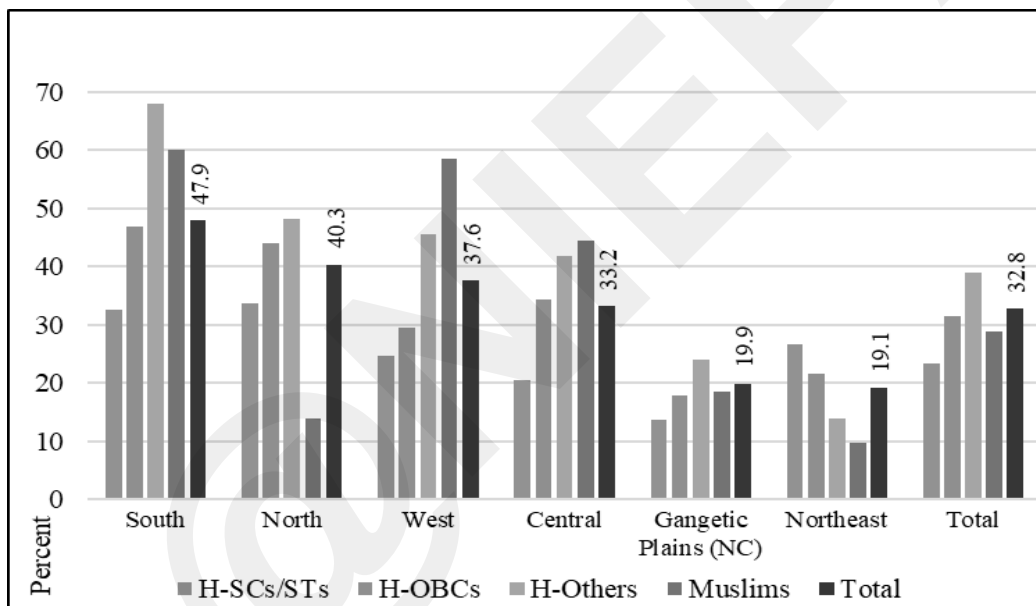
**Region wise & Social Groupwise % of Population (Currently Enrolled in Education & Aged 22 to 35 Years) Attained Higher Education**



A closer look at the HTE participation according to SRCs suggests that the highest proportions are found amongst the Other (General category) Hindus, especially in South and North. They have lower levels of HTE only in North East. The other category which has higher levels in HTE are the Muslims but only in South, West and Central regions. Their participation in North is the least, and at very low levels, and in Gangetic plain and North East. Note that in the states in South, West and in part of Central regions Muslims appear to have benefited from the technical institutions created through the minority educational systems which is a provision under the constitution. Hindu OBCs have reasonable levels of HTE participation in all regions, compatible with the level of HLEs.

FIGURE 11

**Region wise & Social Groupwise % of population (Currently enrolled in Education & Aged 22 to 29 years) attained Higher Education of which Technical**



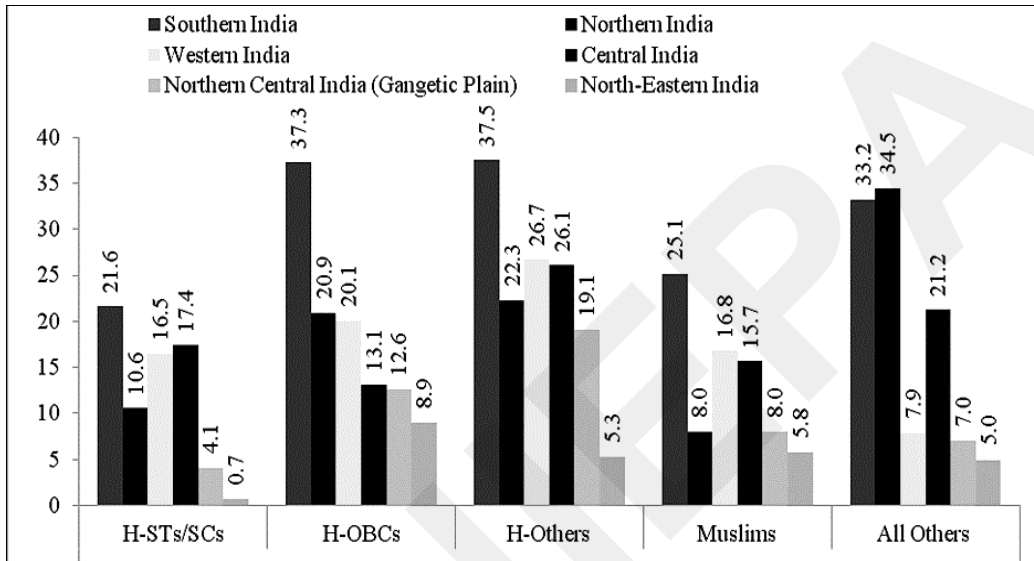
## Cost of Technical Education

As is the case of English-medium education, relatively speaking, the cost of higher technical education is considerably high compared with the non-technical degrees. Recent data on the cost of education were available from the 64th NSSO round; according to these, HLE is on an average three times more expensive than non-technical education. The burden of cost of technical education is observed to be slightly lower for the SCs/STs, Muslims, and in rural areas; but this relative cost difference appears more due to the quality of education differential rather than any equity cost concerns. Broadly speaking, the cost of technical education is relatively low in North-Central and North-Eastern regions. This may again

reflect the qualitative differentials in education suggesting poor quality HTE in these regions compared to the other regions of India.

FIGURE 12

**Enrolment in Higher Level Technical Courses according to Regions and SRCs**



Source: Author's estimates using NSS 64th round (2007-08) survey data

Of all the regions considered in this analysis, Southern India stands out for providing opportunities to all types of SRCs to seek HTE. The North-Eastern is on the other side of the spectrum, at the bottom. Even the Hindu-SCs/STs share in technical education (out of total enrolled SCs/STs) in South India, which is 21.6 per cent --- the lowest among the other SRCs in South India, but is higher than the shares for H-OBCs in all other regions and even higher than H-General for North-eastern (5.3 per cent) and North-Central (19.1 per cent) India. Similarly, Muslims of Southern India show a higher proportion of technical education (25.1 per cent) in their total current higher education flow than any other SRC of any other region except for other minorities of Northern India (34.5 per cent), Hindu-Others of Central India (26 per cent) and Western India (26.7 per cent) as shown in Figure 10. In a relative perspective, however, Muslims are in league with the SCs/STs in many regions and they are at the bottom in Central and North-Eastern regions where they live in substantial proportions.

**Prevalence of English Medium in Higher Level Education**

One of the most crucial issues with respect to higher level education in particular and the overall education policy in general is with respect to the medium of instruction. Since providing education is the responsibility of states in India, there is a wide diversity in the medium of instruction policy. There are issues relating to mother tongue, regional languages,



Hindi as the language of the nation, and English as a foreign language, without which Indians cannot make it to the higher levels of learning and higher levels of earning. The complication has emerged since India is a nation of multiple languages and dialects and the very foundation for the formulation of the states was based on language.

There is no country on this planet which has such a large diversity of languages and associated culture, literature and social value systems. However, it may not entirely be the legacy of the British Raj that now education of children in English is a mechanism to overcome serious socially motivated differentials, and also that contemporary globalising economic system is anchored in English language. As one such example: Today's internet revolution, supported by technological innovation, is entirely dependent upon the English language. In India, therefore, if we intend to discuss and debate HLE, it essentially means education in English language.

Some useful highlight regarding access to English education from the 71st round 2014 data are presented below.

Let us note that detailed and in depth data on language (medium) of instruction were available only in the 64th NSSO round and are being presented below. To capture the prevalence of English-medium higher education in India, the author has estimated the percentage of those currently enrolled with English as a medium of instruction out of all those currently enrolled according to place of residence (rural/urban), gender and SRC for each of the regions identified for this analysis. There are considerable cost differentials between English-medium and other types of HLE.

Difference in prevalence of English-medium HLE according to place of residence is extremely large in all regions except for Southern India, where the difference is relatively low (Figure 13). As much as 93 per cent of the HLE students, who are residing in urban Southern India are studying in institutions where the medium of instruction is English. This proportion in the rural counterpart is also quite high (75 per cent) which is almost equal to the share of English-medium higher education in Northern India, but higher than even the urban sector in Western India and Central India (68 and 52 per cent respectively).

FIGURE 13

**Region wise % of Population (Currently Enrolled & Aged 22 to 29 Years) Enrolled in Higher Education with English as Medium**

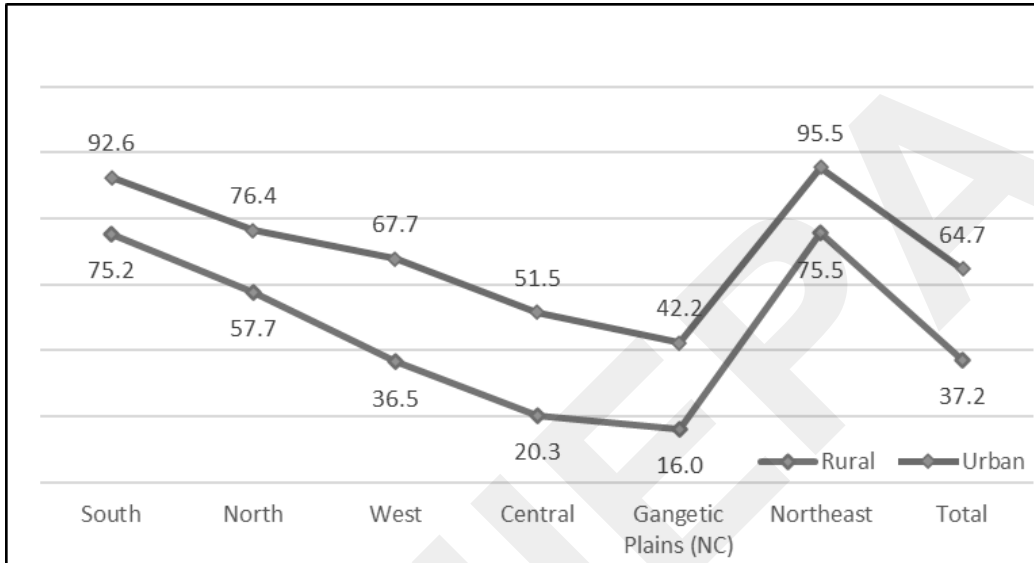
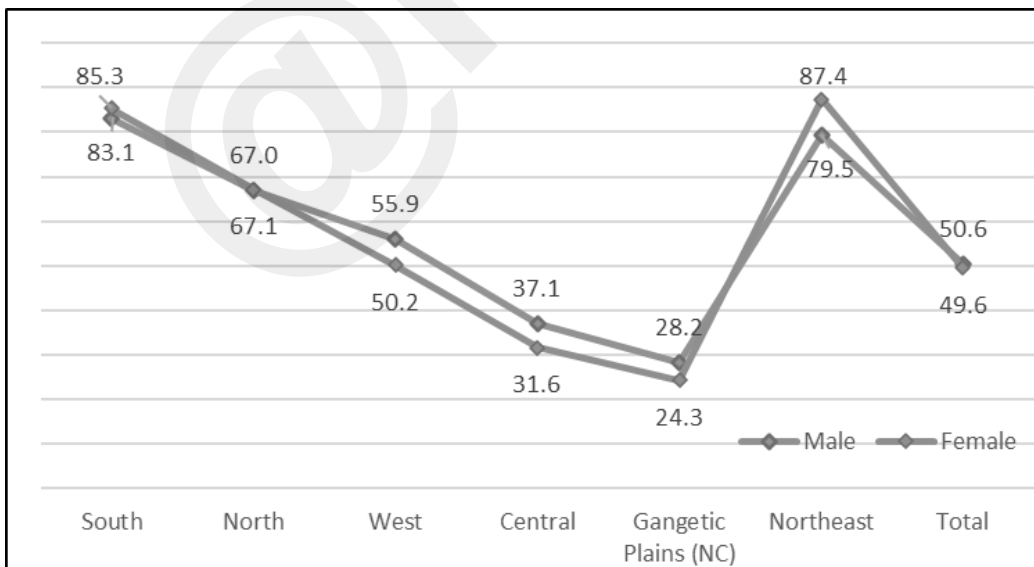


FIGURE 14

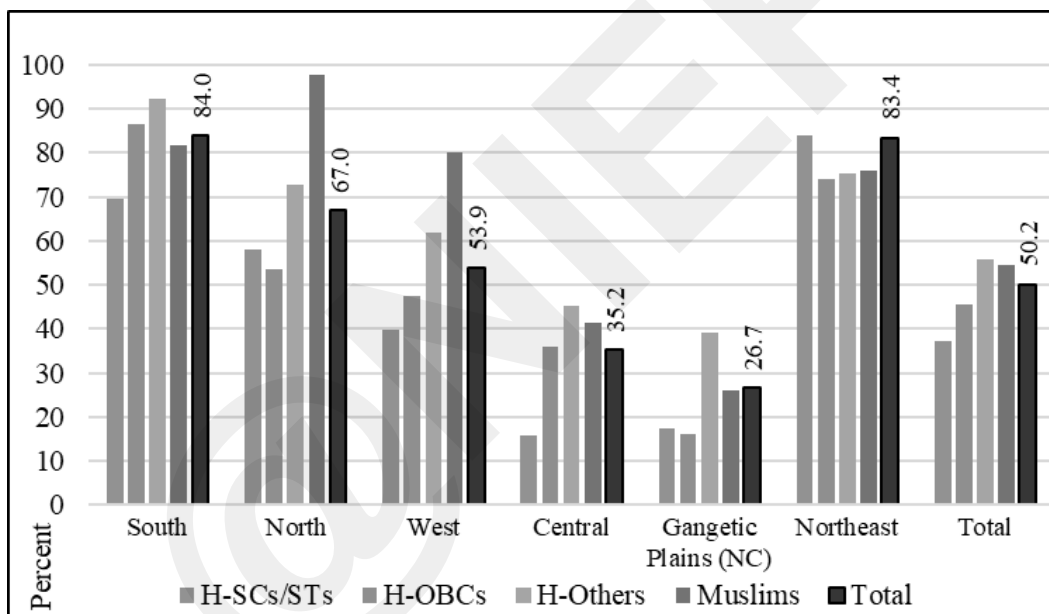
**Region wise & Gender wise % of population (currently enrolled & aged 22 to 29 years) Enrolled in higher education with English as medium**



Since the English-medium higher education is qualitatively better and brings higher returns (Azam *et al*, 2013) and is also essential for cultivating global competence amongst the current and next generations of India, the situation is much worse in rural areas of all the regions, except for Southern India. The penetration of English HLE is least in Northern India where only about one quarter of HLE students pursue in English whereas in South India it is 50 percentage point higher at about 85 per cent. North-Central states collectively are at the bottom in terms of offering English-medium education in both rural and urban areas. Southern states seem outliers (while compared with other regions) by showing a higher preference for English language in HLE across both rural and urban areas. Further, English-medium education is more accessible to both the genders in Southern India.

FIGURE 15

**Region wise & Social Groupwise % of Population (Currently Enrolled & aged 22 to 29 Years) Enrolled in Higher Education with English as Medium**



The difference between Southern India and the rest of regions in terms of English-medium educational accessibility is very huge for both genders. As the case of rural and urban areas, North-Central and Gangetic Plain regions are at the bottom for both the genders while Southern India is at the top with a huge margin. For those who pursue higher education, the difference in proportion of English-medium education for the two genders within each region is not as high as the difference in rural and urban sectors.

### **Cost of English-Medium HLE**

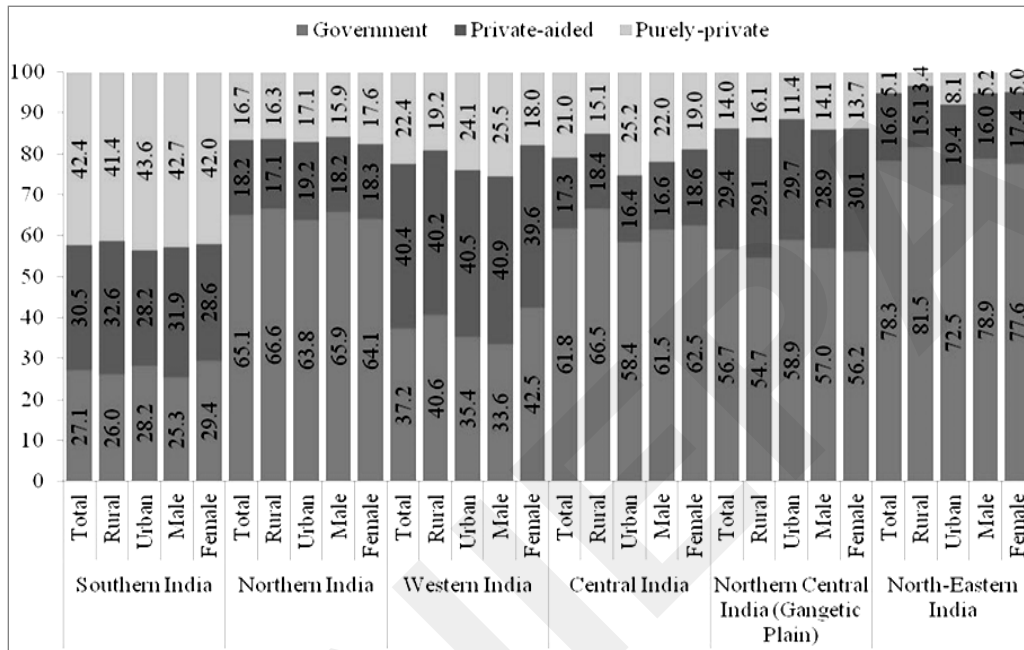
Higher education in English is provided for a premium in India and, as expected, there is a vast cost differential with education imparted in other mediums of instruction (data not presented). English medium HLE costs 6-8 times higher per student per annum than HLE in Indian languages, and this cost is the highest in the western region. Note also that the cost of even regional-language HLE is the highest in the North and, therefore, the cost difference with English-medium HLE appears low in the northern region. It is expected that English-medium education is often offered by the private sector --- not only with the aim of cost recovery but also with a profit motive. Overall, the respective cost of HLE is high in urban areas and the Hindu-Others (General) and other Minorities show higher expenditures. This cost difference appears partly due to relative differentials in quality of education, but the available data and evidence are not sufficient to substantiate this assertion. There is a need to collect more comprehensive information on cost of HLE in India.

### **Public and Private Shares in Higher Level Education**

Given the large base of the Indian youth and their consistent distribution across the nation, providing educational infrastructure is a challenge for India. Since India's is a growing population, the infrastructural need is growing by the day. People's aspirations are changing fast, which is also boosting the demand for education at levels including the HLE and HTE. Although the government has promised compulsory primary and elementary level schooling for the children of all citizens in India and the Sarva Shiksha Abhiyan is now an over 30-year-old programme, a large number of children are still out of school, mostly due to high dropouts caused by a combination of supply and demand factors. Further, educational provision in India is based on a kind of loose pyramidal structure which links elementary level schooling to successively higher levels such as matric, pre-university, university and technical education. While during the early period after Independence the state governments established the HLE infrastructure, the facilities could not sustain and failed to ensure access to all eligible citizens due to demand pressure caused both by an increase in youth population and also increasing higher level educational aspirations.

FIGURE 16

## HLE Shares according to Types of Institution, Place of Living and Gender



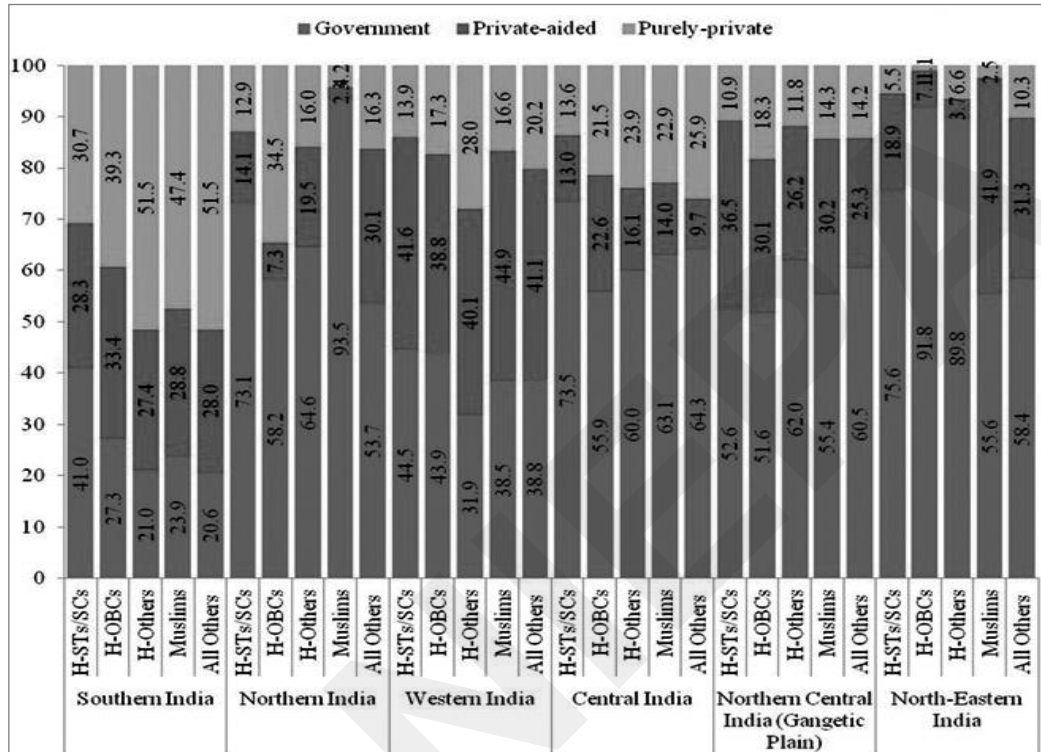
Source: Author's estimates using NSS 64<sup>th</sup> round (2007-08) survey data

There has, therefore, been a proliferation of private educational infrastructure at the higher level across India. But while being costly they often seem to be imparting low-quality education compared with the standard government-run institutions. Private institutions thus exploit to profit from the demand-supply gap in higher education industry. However, one advantage of private HLE institutions has been that they offer a variety of skill-promoting courses as per the demands of the market economy, which are not usually included in the curriculum offered by government-run institutions. Therefore, the private institutions imparting higher education needs to be supported by creating enabling and promotional role of government with a strong regulatory mechanism to set the standard of education (Mahajan, 2012; Basant and Mukhopadhyay, 2010). In the following lines, we present the public and private shares of HLE across regions and other characteristics. Often private education is chosen in the hope that it provides qualitatively better education and often such education is imparted in English language. However, in this analysis, it was not possible to address the quality of HLE issue according to type of institutions.

The NSSO data were classified by the type of educational institutions based on a combination of funding and management criteria into five categories, namely, government, local body, private-aided, private un-aided, and not known. The author recoded them into three broad categories,

FIGURE 17

HLE Shares by Types of Institutions and SRCs



viz., government (government and local body institutions together), private-aided and purely private institutions which include private un-aided and not known together and the shares of those institutions in higher education have been carried out. These shares by region and for sector, gender and SRCs are presented in Figures 16 and 17.

The proportion of males and females across both rural and urban parts of Southern states, which are receiving HLE from government institutions, is the least, followed by the Western region and then by other regions in India. Further, while the relative share of purely private HLE is high in the South, the Western region reports of relatively higher private-aided model of HLE. All other regions, including Northern, North Central, Central and North-Eastern depend dominantly on government- provided HLE infrastructure.

Surprisingly, however, one finds little variation based on the place of living and gender in the type of HLE institutions within each region, which indicates the fact that pursuing higher education from a government, private-aided or purely private institution is entirely a regional phenomenon. Almost an equal percentage share of males and females in total males and females enrolled in higher education is observed in each type of institution, which suggests that no discrimination exists between males and females on choice of institutions.

The presence of government institutions providing higher education is much lower in South and West as compared with other regions while private-aided institutions in Western

India and purely private institutions in Southern India dominate with their highest shares in higher education. Purely private institutions' presence is very low in higher education across all the regions except for Southern India (Figure 17).

### Cost of HLE according to type of educational institution

As a matter of routine, the cost of education indeed differs according to the type of institution. Government-run institutions are relatively low-cost, excepting in North and South India where the cost is double the national average. It is expected that private-aided facilities should be costing less than the purely private institutions; and broadly this appears to be true. Yet in many situations this broad logic does not stand. In a number of situations, the cost of education is higher in private-aided institutions compared with the purely private ones. Such cost differences reflect highly complex structure of the cost of HLE in India.

There is what is known as capitation fees and a hoard of other types of costs associated with HLE in India. But suffice it to state that India is facing a sort of a crisis in the wake of multiple types of dual pricing: English education costs are very high compared with education in local language; technical education costs are very high compared with regular degrees, and private and private-aided education costs are high. *Given such cost differentials and associated differentials in quality of education, it appears that the relatively poor and deprived people are trapped in a web of low-quality education.* Without reforms in educational system there is no hope for the deprived communities in India. Although free education is provided at school level by government, at the levels above the school, free or low-cost education is almost non-existent. NSSO data have not yielded any cost of education differentials according to consumption expenditure quartiles, thus even the poorest households (Bhattacharya, 2012) incur the same absolute expenditure which amount to a highly differentiated expenditure as proportion of household income.

### Conclusions and Discussion

In India, research and analysis of HLE is rather rare and far between, mostly due to want of data. However, the NSSO, in its 71st round survey, collected useful data on education including that on higher levels, with 2014 as the reference year. In this paper some rare data relating to HLE from 64th round, namely 'Participation and Expenditure in Education,' were also used wherever necessary.

These data provide an opportunity to estimate, for example, the prevalence of HLE among the people of different age groups so as to trace the improvements over time. Two broad age groups were created reflecting different generations, one aged 22-35 years (current generation) and another group of 36 years and older identified as the past generation. Structurally, it is possible from these data to find out what proportion of all higher-level educated are technically educated, such as those having a diploma or degree in engineering, medical and so on. In India, there is an association between the medium of instruction and quality of education. Any HLE imparted in English language is likely to be relatively better in quality terms, and also expected to yield higher wages in the employment market, often over thirty times higher. For the first time in India, through these data, it was possible to estimate the penetration of English-medium HLE across the many regions. Another unique structural issue is the growing privatisation of HLE. Estimates of HLE

infrastructure according to management type and funding model in terms of government, private-aided and purely private are also presented in this analysis.

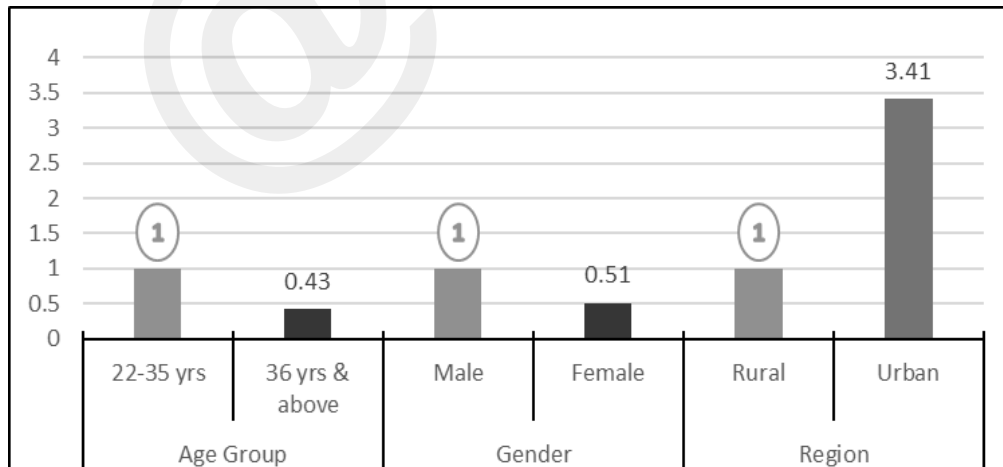
Over all, it is encouraging to note that the stock of HLE amongst the current generation (22-35 years old) and among the genders, rural-urban habitations and SRCs is found to be higher than the stock of HLE in the past generations (36 years and older). Although there is regional differentiation in the levels, generally the current generation has better access to HLE. To be specific, in both the past and current generation, HLE stock for men is higher than that of women, considerably higher for urban than rural population and favours the high-caste Hindus and minorities other than the Muslims. SCs/STs and Muslims are found to be most disadvantaged although one notices relatively better growth opportunities for the SCs/STs. For example, the per cent difference between the two generations' HLE prevalence is highest for females, SCs/STs and OBCs. This higher difference is because of low prevalence in past generation (low base). However, in case of Muslims while having a low base (low prevalence) in the past generation, the per cent difference or improvement amongst the current generation is the least, suggesting deepening of inequity with respect to the Muslim community of India.

The following graphs highlight various differentials using the 2014 data and present the coefficients computed using the multivariate regression techniques to bring robustness in estimations.

Note that the younger age population the doubled access to HLE than their parental generation which is an excellent feat and evidence of India marching ahead in education (Figure 18). Yet the females have considerably less access to HLE almost one half of the male access suggesting deep disparity in education girls. On the other hand, the urban areas have extremely high access compared to the rural areas which is expected due to concentration of educational institutions in some centralised urban locations.

FIGURE 18

**'Multivariate Regression Coefficients' of attaining HLE by Age Group, Gender & Region for Controlled categories set at 1**





Considering the levels of the SCs/STs as the standard, the High Case Other Hindus have close to four times advantage, followed by over two times advantage for other minorities other than the Muslims. It is only the Muslims who face more difficulties than the SCs/STs to attain the HLE. See Figure 19.

FIGURE 19

**Social Groupwise 'Multivariate Regression Coefficients' of attaining HLE for Controlled category 'Hindu SC/ST' set at 1**

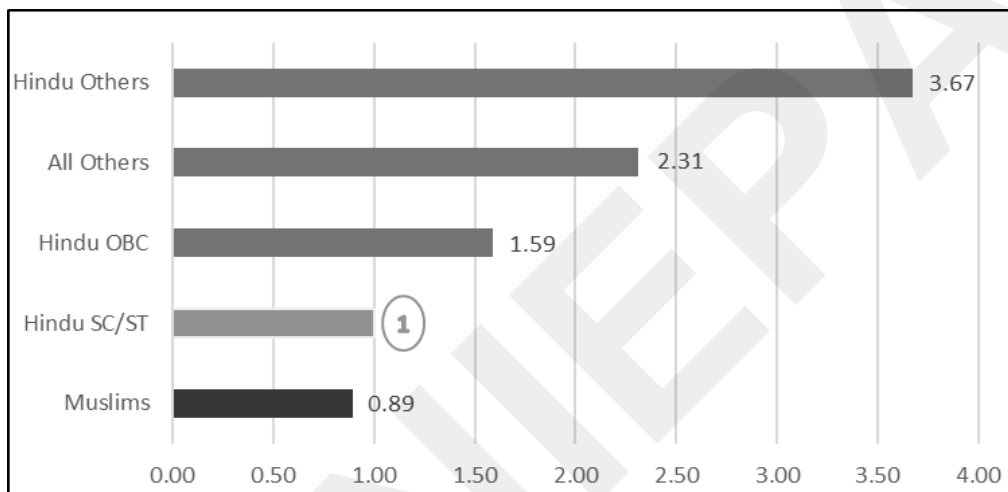
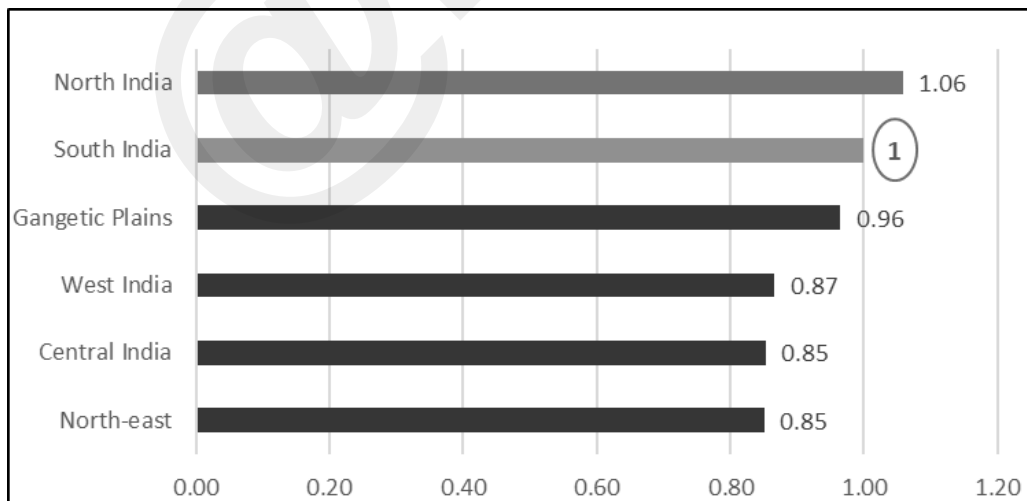


FIGURE 20

**Region wise 'Multivariate Regression Coefficients' of attaining HLE for Controlled category 'South India' set at 1**



*The general trend is that the positive transition and improvements in HLE is favouring the current generation living in urban areas, who are men and belong to high caste Hindu community and other minorities – generally those who were already at the top end during the past generations.* While the trends suggest catching up is happening in case of women, rural areas and the SCs/STs, the Muslim community has remained deprived and shows no signs of catching up with the overall current generation in speed and direction.

One of the most dynamic impacts on levels and achievements of HLE and its structure concerns the geographic location as expressed in the six broad regions created for this analysis. Southern India has shown the greatest improvement in terms of HLE prevalence amongst all the social dimensions analysed – according to gender, place of living and amongst all the SRCs. Western and North India follow as the next better regions where HLE is furthering benefits to the current generation. The North Central, Central and North-Eastern regions show lower levels of improvements in HLE favouring the current generation.

The uniqueness of this address lies in estimating the share of English-medium HLE across regions and other social parameters. Overall, one finds better access to English education for both genders, place of living and for all SRCs, and most of this positive advantage has been materialising in the South, North and Western regions. South India stands out as the region which provides the highest level of opportunity for English-medium HLE for the current generation. English-medium education is 3-8 times more expensive than HLE in local-medium education. It is expected that the cost differentials are mostly due to differentials in quality of education. The cost ratio (English to local languages) is highest in Southern India for almost all the sub-sections of population.

The desire and demand for English education is growing all over India. In spite of the high costs, one finds that the growth in access to English-medium HLE is broad-based, including for women, in rural areas and amongst all types of SRCs, including the SCs/STs and Muslims. But due to infrastructural and institutional constraints, English-medium education is accessible fairly well in South India, followed by reasonable access in Western and Northern India. Other regions have high demand but poor institutional and infrastructural supply of English HLE.

A technical degree or diploma is much sought after as it is considered employment friendly as well as a provider of higher wages. Southern India offers better opportunities to secure HTE compared to all other regions in India. This region further provides for equal access to women, rural areas and for all SRCs. Once the technical education infrastructure is present, it becomes accessible to all.

However, the cost of technical education is considerably high, when compared with non-technical education. Yet, the high cost is not a deterrent since all sub-sections of population (males, females, all SRCs, rural and urban) are willing to incur high expenditure to seek HTE.

The share of students currently enrolled in purely private institutions is the highest in Southern India and this is more or less so for all sections of society. The cost of private education is also the highest followed by private-aided and government institutes (except for North India and Central India where the costliest education is provided by private-aided, followed by purely private institutions, while the government institutions are the cheapest).

Multivariate analyses reconfirm the major findings enunciated above. The HLE enrolment is higher for males, urban residents, and the Hindu upper castes have the highest chances of getting enrolled in HLE. The Hindu-OBCs are almost as likely to get enrolled in

HLE as the SCs/STs, while the Muslims are least likely, less than the SCs/STs, to get enrolled in HLE. As the household MPCE quintile increases, the chances of getting HLE increase sharply. The Southern Indian population has the highest chances of pursuing HLE, followed by North-Central India, Central India, Western India and North-Eastern India, with North India being at the bottom. The presence of any household member with educational attainment higher than matriculation increases the chances of other household members getting HLE to a very high degree.

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## Development and Validation of Anganwadi (Preschool) Assessment Scale in Indian Context<sup>§</sup>

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Monu Lal Sharma\*  
Anubha Rajesh#  
Zubair Meenai\*\*  
Geeta Menon##

### Abstract

The early years of a child set the foundations for his/her life and are crucial for his/her holistic development and wellbeing. In India, early childhood care and education (ECCE) is officially looked after by the Ministry of Women & Child Development (MWCD). The Government has reaffirmed its commitment by officially passing the resolution through the National ECCE Policy in 2013 and the recent National Education Policy 2020. The Government runs the Early Childhood Education (ECE) programme through a vast network of ICDS centres, known as Anganwadi Centres (AWC). An Anganwadi centre provides health and nutrition services and preschool education to children below 6 years old. The Ministry has laid down non-negotiable quality indicators for Anganwadi centres to ensure the delivery of comprehensive ECCE. Globally, various international agencies focus on quality provisions of ECE to strengthen the foundations of children and their better learning outcomes. Keeping in view the importance of quality provisions for ECE, the present study attempts to explain important quality provisions with regards to Anganwadi centres and describes the development and validation of

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<sup>§</sup> This tool was independently developed by a team of the Centre for Early Childhood Development & Research (CECDR), Jamia Millia Islamia, to assess the quality provisions across different states in India. The authors wish to express their appreciation for the funding provided to use this tool as a part of two independent research studies. One research study was commissioned by Save the Children, India, and another was commissioned by the Bernard van Leer Foundation (BvLF).

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Anganwadi Assessment Scale (AAS) by using AMOS for confirmatory factor analysis. This article focuses on the development of an Anganwadi Assessment Scale which comprises six components (Physical Infrastructure, Water, Sanitation and Hygiene or WASH Facilities, Preschool Environment, Curriculum Transaction, Teacher-Child Interactions and Safety of Children). The results indicated that the scale is reliable (Cronbach's alpha = .93) and has factorial validity. The structure equation modelling, also used to examine the relationship among the components and goodness of fit index (CMIN/DF) was found to be 2.016 and RMSEA was 0.074. Development and validation of the scale is explained in detail with its usage.

## Introduction

The Indian census of 2011 revealed that there were a total of 158 million children between the age group of 0 to 6 years, and the number continues to increase with the steady growth of population. Survival, growth and holistic development of these children should be looked as the primary responsibility of the nation if we are to reap the benefits of economic returns. For the holistic development of these children, there should be balanced linkages between education, health and nutrition. In India, there are many national programmes for children but the Integrated Child Development Services (ICDS) is recognised as one of the largest and comprehensive programmes for early childhood care and development in the world.

The Anganwadi Centres (AWCs) were developed with the philosophy that a good early childhood care and education centre could be run within the communities with locally developed, low-cost teaching materials. An Anganwadi centre should be located in the "Angan" or courtyard where accessibility will not be an issue for children as well as other beneficiaries. Anganwadi centres cater to the needs of children in age group of 0 to 3 years through the envisaged ECCE programme, with core interventions like home-based guidance for parents, early stimulation, early screening and referrals, optimal infant and young child feeding (IYCF) practices, monthly monitoring and promotion of child growth and developmental milestones. For children of 3 to 6 years, Anganwadi centres provide non-formal preschool education (play and activity based approach, and learning by doing), quarterly monitoring and promotion of child growth and developmental milestones. Celebration of a fixed monthly ECCE day, initiated in 2013 for children of 0 to 6 years, parents and communities is a common platform to strengthen interface between the ICDS functionaries, parent and communities. Apart from these interventions, ICDS keeps providing supplementary nutrition, in which children are supposed to get the morning snacks, hot cooked meal and take-home ration (THR) as per the norms in the Anganwadi centre.

In an Anganwadi centre, services like enrolling children and transaction of preschool education, providing healthy food, organising immunisation sessions, etc, are ensured by an "Anganwadi Worker" (AWW), assisted by an "Anganwadi Helper" (AWH). Being cognisant of the significance of early years, the ICDS programme plays an important role in strengthening the foundations of a child and providing it a stimulating environment for learning. The recent focus of the Government on creating an integrated system of care and education and an enabling environment for children reaffirms its commitment in ensuring quality ECCE, and thereby strengthening the foundational stage of children.

## Status of ECCE in India

Over the years, research has confirmed that investments in ECCE, made through a synergistic approach of stimulation, education, protection, nutrition, health, water and sanitation, reap higher productivity and superior results. Benefits of investing strategically in ECCE are globally acknowledged as the smartest choice if we have to eradicate poverty, enhance prosperity and ensure sustainable development of a country (World Bank, nd; *The Lancet*, 2016). While the increase in access to ECCE programmes is visible, there is a need to ensure quality in the existing services (Yoshikawa *et al*, 2018).

Empirical research confirms that neglect in the formative years, typically experienced by disadvantaged children, can lead to cumulative deficits that last throughout the life span. In the low-income and middle-income countries, nearly 250 million (43 per cent) children younger than 5 years are stunted or live in poverty (Black *et al*, 2017). These children are at a risk before they reach their optimal developmental potential and are more likely to demonstrate lower academic achievement outcomes and exhibit poorer cognitive ability (Vegas and Santibáñez 2010; Glewwe, Jacoby, and King 2001). Disadvantaged children experience multiple risk factors related to poverty, and these are likely to occur together. These factors limit the access of disadvantaged children to quality health services, basic water and sanitation infrastructure, adequate nutrition, quality stimulation at home and quality childcare and preschools (Grantham-McGregor *et al*, 2007; Cole and Cole, 2000).

As per the Economic Intelligence Unit report, India ranks last (45th) with limited accessibility, low quality and high costs in the ECCE survey (The Economist Intelligence Unit Limited, 2012). Despite the recent focus on ECCE in India, the early years are excluded from the Right to Education (RTE) Act, 2009 that recognises education as a fundamental right for children in age group of 6-14 years. The roll-out of National ECCE policy, and National ECCE Curriculum Framework in 2013 do showcase the Government's commitment for ECCE; nonetheless the recent National Education Policy (NEP) 2020 once again pinpoints the half-hearted commitment of the Government. While the NEP 2020 acknowledges the significance of foundation years under its ambit, there continues to be an ambiguity regarding the inclusion of 3-6 years under RTE. The current minimalistic approach, with glaring gaps on accreditation and regulation of ECCE programmes by the Government, gives a push towards the poor quality ECCE programmes for children in 0-6 years. In the absence of standards and regulations, ECCE programmes are likely to offer developmentally inappropriate curriculum, crowded classrooms with unfavourable teacher child ratio, untrained teachers, monotonous and uninteresting classroom instruction with overemphasis on the 3 R's. These programming inadequacies are likely to be detrimental to the development of children. This situation is further complicated by low awareness among parents regarding the varying developmental needs of children, what constitutes an appropriate curriculum, and what pre-primary school experiences facilitate the optimal development of 3 – 6 years old children. All of this suggests that there are gaps in the supply and demand side of preschool programming, and this needs to be addressed. While various forms of preschool programmes exist in India, and the access to preschool programmes is also on a rise, huge gaps continue in terms of quality. Evidence further confirms that high-quality early education programmes are important to get better outcomes for children. This necessitates an urgent need to develop and implement some quality and responsive preschool programmes. Hence establishing an enabling, quality and equitable environment, with a

focus on monitoring will ensure high-quality and thereby help in breaking the intergenerational cycles of poverty and deprivation (Sayre *et al*, 2015).

## Steps Towards Ensuring Quality

The MWCD (GoI, 2013b) mentioned in its ICDS restructuring framework that repositioning of the Anganwadi centre as a “vibrant ECD centre” to become the first village outpost for health, nutrition and early learning --- with adequate infrastructure and human resources for ensuring a continuum of care in a life-cycle approach to early childhood care and development, emphasising the child’s physical, cognitive, emotional and social development until the age of six years. This will be possible if the Anganwadi centres have adequate infrastructure (indoor & outdoor space for play), are equipped with child-friendly modalities (appropriate wall painting displayed at height of children, display of children’s work, organise learning corners), adequate WASH facilities (provision of separate kitchen, safe drinking water and child-friendly toilets), learning environment (activity based curriculum and positive classroom interactions). These components will facilitate a child-centric environment, thereby strengthening children’s learning, kindle their curiosity to explore and construct their own knowledge. Continuous monitoring and supportive supervision with special emphasis on developmentally appropriate preschool education will help in regulation and assurance of quality. The National ECCE Policy (GoI, 2013a) also talked about non-negotiable quality standards such as adequate infrastructure, effective and continuous training of Anganwadi workers, favourable teacher child ratio, age and developmentally appropriate child-centric curriculum to be transacted in the mother tongue or local vernacular, developmentally appropriate toys and learning material, child friendly water sanitation and hygiene (WASH) facilities, and separate cooking areas, etc.

The National ECCE Policy (GoI, 2013a) mentioned that for monitoring and supervision, various means of verification such as Management Information System (MIS) or independent surveys would be adopted. Therefore, the present study attempts to construct a scale to measure the Anganwadis on different quality indicators. It focusses on quality parameters such as physical infrastructure, WASH facilities, child-centric preschool environment, developmentally appropriate curriculum transaction and sound teacher-child interaction, adequate teaching learning material, etc, with regards to preschool education programme in Anganwadis. The argument is that if an Anganwadi has all the quality indicators of preschool programme then it should be monitored and assessed from time to time for sustainability and upgradation. Quality indicators are important to facilitate the Anganwadis’ functioning in appropriate manner. The growing importance of quality measures in ECCE makes it essential to have an instrument to assess an Anganwadi centre with regards to its quality provisions.

While most of the existing measures were developed in the west, they need not necessarily reflect ‘high quality’ that is representative of the local cultural contexts (Chen & Wolf, 2021). Institutions like MWCD and NCERT have provided quality indicators for preschool programme or Anganwadis but there are no provisions to measure the quality quantitatively. Further, there are no empirical data available about the standardisation process. There are some scales like ECEQAS and TECERS which require rigorous training and sound knowledge of ECCE for an administration of the tools. Weighing the current scenario, it is important to have such ECE measures in place as not only align with the



context but are also easy to use. Such tools can be used effectively by anyone, including the ICDS stakeholders with limited knowledge of ECE for monitoring and evaluation. Importantly, the particular tool will also provide the evidences quantitatively. Given the unavailability of standardised tools at the national level, our study team embarked on a process of systematic tool development. The basic premise that guided our process of tool development was to ensure quality and take into account the local cultural context.

## **Method of Scale Construction**

The present study is an attempt to construct a scale to assess the Anganwadi Centres on different quality parameters of preschool programme. For the scale construction, this study was conducted in two phases. The first phase involved item generation, expert consultation for content validation and domain framing, item analysis and, lastly, an exploratory factor analysis. In this phase, dimensions and components were conceptualised and validated through the subject experts' judgement; an exploratory analysis was also done. The second phase involved the confirmatory analysis to establish factorial validity.

## **Desk Review & Item Generation: Phase I**

The tool development process was initiated with an extensive desk review of the existing research studies, early learning quality framework documents, and the published tools available nationally and internationally. The first step involved an exercise to understand the different quality provisions of early childhood education and development programme. The reviewed documents included the Quality Standards for ECCE framework (MWCD) and Child Friendly Schools (UNICEF, 2009). While many observation tools exist for measuring quality in early childhood environments, the desk review revealed the lack of standardised data collection tools in Indian context, specifically for the disadvantaged population. Evidence highlights the need to utilise contextualised tools specifically for disadvantaged populations. Based on the various instruments identified, a detailed matrix listing information on key facts as name of the measure, a brief description, domains measured by the tool, reliability and validity of tool was developed (see Table 1). This helped in determining the development of contextualised tool with an estimation of the probable challenges and their resolution.

TABLE 1

**Observation Tools to Measure Quality of ECCE Programmes**

<i>S. No.</i>	<i>Measures/Tools</i>	<i>Description of Tool</i>	<i>Area of Assessment</i>	<i>Reliability &amp; Validity</i>
1	Association for Childhood Education International (ACEI) Global Guidelines Assessment (GGA)  Developed by Association for Childhood Education International (ACEI) (2011)	The tool is designed to systematically assess the quality of ECCE programmes. The early childhood professionals use the tool to observe and self-assess for improving programme quality.	The tool consists of 76 items across five subscales: <ul style="list-style-type: none"> <li>• Environment and Physical Space,</li> <li>• Curriculum Content and Pedagogy,</li> <li>• Early Childhood Educators and Caregivers,</li> <li>• Partnerships with Families and Communities and</li> <li>• Young Children with Special Needs.</li> </ul>	For each dimension, internal consistency ranging from 0.89 to 0.92. The overall score of coefficient alpha is 0.97 (Hardin, Bergen & Hung, 2013).
2	Classroom Assessment Scoring System (CLASS)  Developed by Hamre, Goffin & Kraft-Sayre (2009).	CLASS is an observation tool that assesses the quality of teacher-child interactions. The tool is developed for infants, toddlers, Prekindergarten, Kindergarten to Grade 3, Upper elementary and Secondary age groups.	The tool is inclusive of 10 dimensions of classroom quality across 3 domains: <ul style="list-style-type: none"> <li>• Emotional Support,</li> <li>• Classroom Organisation and</li> <li>• Instructional Support</li> </ul>	Reliability: Factors namely emotional support' and 'structural support' has coefficient alphas of 0.85 and 0.88 respectively. Validity: The total score for the ECERS correlated $r = 0.52$ with emotional support and $r = 0.40$ with instructional support.
3	Early Childhood Environment Rating Scale Revised (ECERS-R)  Developed by Clifford, Reszka & Rossbach (2010).	ECERS-R is designed to assess ECCE programmes for children ages 2 to 5. The tool is used as a programme improvement tool, policy development, improvement advocacy and training.	The ECERS-R consists of 7 subscales with 43 items: <ul style="list-style-type: none"> <li>• Space and Furnishings,</li> <li>• Personal Care Routines,</li> <li>• Language Reasoning,</li> <li>• Activities,</li> <li>• Interaction,</li> <li>• Programme Structure and</li> <li>• Parents and Staff</li> </ul>	Reliability: The overall score of coefficient alpha is 0.92. Validity: There are evidence of moderate to strong correlations with CLASS ( $r = 0.52$ for emotional climate and $r = 0.40$ for instructional support) and the extended ECERS (ECERS-E) ( $r = 0.78$ ).

4	<p>Early Childhood Education Quality Assessment Scale (ECEQAS)</p> <p>Developed by Centre for Early Childhood Education &amp; Development, Ambedkar University, Delhi (2011)</p>	<p>The tool helps in comprehensive assessment of quality of ECCE programmes. It comprises of three parts- Part I – Observation of the actual activities being conducted in the early childhood education classroom at the interval of 10 minutes. Part II – It is a rating scale focuses on the physical conditions in and around the centre and classroom Part III – It is also a rating scale focuses more on quality of the teacher-child interaction with specific reference to different developmental domains</p>	<p>The tool includes 3 major domains with 6 sub-domains:</p> <ul style="list-style-type: none"> <li>• Physical infrastructure and materials</li> <li>• Class management and organisation</li> <li>• Content and process of the programme in terms of:             <ul style="list-style-type: none"> <li>- Language and reasoning experiences, including pre-literacy and numeracy</li> <li>- Creative activities</li> <li>- Self-help skills</li> <li>- Fine and gross motor activities</li> <li>- Social development</li> <li>- Teacher disposition</li> </ul> </li> </ul>	<p>The tool has been tested on inter-rater reliability in 2012 and the correlation between the scores of two days observation by different researchers is 0.93.</p>
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Subsequent to the extensive review, the research team identified the development of broad domains relevant for the study, i.e., physical infrastructure, child-friendly environment and safety, teacher-child interactions, curriculum transaction, etc, of a quality provision. These components were used as a guideline for the process of tool development. In addition to these components, equity, diversity (in actual numbers) and inclusive environment were the fundamental principles guiding our scale construction. Items were generated under each domain and an item bank was developed. Several intensive in-house consultations were organised with the team members including professors, assistant professors and other research staff, in order to increase the rigour, reduce redundancy in the tool and remove the ambiguity from the items. The scale was revised on the basis of in-house consultations. The next steps involved review and feedback from the technical workgroup, translations and back translations, training of field staff, and preliminary try-out and item analysis.

### Piloting of the Scale and Expert Consultation

A preliminary try-out of the scale was done in 60 centres, of which 30 were in urban settings (Delhi) and 30 were in rural settings (Odisha) in order to check the feasibility of items. After making the necessary changes, a final version of the scale was prepared and shared for translation in Oriya and Hindi. The tool was translated in Oriya and Hindi by

language experts; back translation was also done. After incorporating the changes and pilot testing, the broad domains were formulated as follows:

- Physical Infrastructure
- Water, Sanitation & Hygiene (WASH)
- Child Friendly Preschool Environment
- Curriculum Transaction
- Teacher-Child Interactions
- Child Protection and Safety

Subsequent to the desk review and item generation, the scale was taken to the field to examine the feasibility of items in the scale and their inter-connectedness, important to carrying out an item analysis. Item analysis is a process primarily used to avoid redundancy and to set the discrimination parameter. Item difficulty has a powerful effect on both the variability of test scores and the precision (Thorndike *et al*, 1991).

The scale was developed to assess quality provisions for Anganwadi centres and was purely observation based. Hence it was subjected to an analysis of the item discrimination index by calculating the correlation between each item and total score. All items above the range of 0.30 were selected in the final scale. Good items had a discrimination index of .40 and higher; reasonably good items from .30 to .39; marginal items from .20 to .29, and poor items less than .20 (Ebel & Frisbie, 1986). Out of a total of 63 items, 9 items (item 5, 7, 9, 17, 36, 59, 60, 62 and 63) were below the range of 0.30. It is likely that these 9 items measuring particular quality indicators were not observed in more than 80 per cent of the Anganwadi centres during the data collection. Some of these items were provision of cooking gas and storage, sources of drinking water in AWC, safety level of AWC building, cleanliness around the centre, hazardous condition around the centre, availability of first aid box, etc. Since these items are crucial and non-negotiable quality indicators for any good ECE programme, they were retained.

## Method of Data Analysis

After the item analysis, the obtained data were subjected to an exploratory and confirmatory factor analysis by using SPSS.21. The model fit evaluated goodness-of-fit indices including the  $\chi^2$  /degrees of freedom ratio ( $\chi^2/df$ ), the comparative fit index (CFI), the Tucker Lewis Index (TLI), the root-mean-square error of approximation (RMSEA) and its 90 per cent confidence interval. Multiple indices were used to gather diverse information for estimating the model fit because these indices provide conservative and reliable estimate of the model fit (Brown, 2015). Correlation was computed between the latent variables to establish the factorial validity and also their accordance with the other constructs (teaching learning materials and different activities conducted for preschool education).

## Exploratory Factor Analysis

### Study 1 and Sample

The study was conducted in 12 districts of Odisha state, India. From this diverse universe, the study was conducted in 1448 Anganwadi centres which were observed for the entire day on different quality provisions, equity and diversity of ECE programme to be measured as a part of the developed scale.

### The Anganwadi Assessment Scale

The Anganwadi Assessment Scale (AAS) was developed and divided in three different sections. Section I of the scale included the demographic details of the AWC and AWW which are vital predictors of quality provisions. Section II captured the picture of demographic details of children attending AWC and their caste composition in order to understand the diversity and inclusive practices. Section III comprised six domains such as Physical infrastructure, WASH facilities, Child friendly preschool environment, Curriculum transaction, Teacher-child interactions, and Safety of children. The observers were required to rate each item on a three point rating scale, ranging from poor to good ("poor = 1, average = 2 and good = 3"). The Part II of the observation scale was focussed on availability and utilisation of different teaching learning materials. The responses of availability was recorded in "yes & no" and the responses for utilisation of the material were recorded in a three point rating, ranging from "Not used = 1, Often used = 2 and Mostly used = 3". Section III consisted of a list of different activities, also including "no activity," in which actual activities conducted in the Anganwadi centres were observed and recorded, including the duration for every particular activity. The scale also captured the enrolment and attendance of the children to understand teacher-child ratio.

### Results

The tool was theoretically constructed with the underlying hypothesis that each item was measuring the same construct or factor. A separate exploratory factor analysis (EFA) was conducted for each of Physical Infrastructure; Water, Sanitation & Hygiene (WASH); Preschool Environment; Curriculum Transaction; Teacher-Child Interactions; and Safety of the Children, using all of the hypothesised items. Table 2 summarises the fit model of the EFA's at the domain level. The fit of the Exploratory Factor Analysis were evaluated using combination of absolute and incremental indices including Norm Fit Index, Comparative Fit Index (CFI), Tucker & Lewis Index (TLI) and Root Mean Square Error of Approximation (RMSEA). Values of RMSEA < .05 - .06 and CFI and TLI indices > .95 typically indicated the models that fit the data. The appropriate level for the RMSEA was established at "a cut-off value close to .06" (Hu & Bentler, 1999) and .05 - .08 (Schumacker and Lomax, 2010).

TABLE 2

**Summary of Fit Model of the Exploratory Factor Analyses (EFAs) at the Domain Level**

<i>S. No</i>	<i>Domains</i>	$\chi^2$ ( <i>df</i> )	<i>RMSEA</i> (90% <i>CI</i> )	<i>NFI</i>	<i>CFI</i>	<i>TLI</i>
1.	Physical Infrastructure	2277 (90)	.130	.697	.705	.655
2.	WASH	3073.07 (54)	.197	.534	.538	.435
3.	Preschool Environment	215.19 (14)	.10	.953	.956	.934
4.	Curriculum Transaction (CT)	1229.73 (119)	.080	.842	.854	.834
5.	Teacher-Child Interactions	626.97 (27)	.124	.826	.831	.775
6.	Safety of the Children	10.20 (5)	.027	.952	.974	.949

Based on the values of RMSEA, NFI, CFI and LI indices in the above Table 1 for domains, namely curriculum transaction ( $X^2 = 1229.73$  ( $df = 119$ ),  $RMSEA = 0.080$ ,  $CFI = 0.854$  and  $TLI = 0.834$ ) indicated the fit model, safety of the children ( $X^2 = 10.20$  ( $df = 5$ ),  $RMSEA = 0.027$ ,  $CFI = 0.974$  and  $TLI = 0.949$ ) indicated the fit model to the data, preschool environment ( $X^2 = 215.19$  ( $df = 14$ ),  $RMSEA = 0.10$ ,  $CFI = 0.956$  and  $TLI = 0.934$ ) indicated the fit model to teacher-child interactions ( $X^2 = 626.97$  ( $df = 27$ ),  $RMSEA = 0.12$ ,  $CFI = 0.831$  and  $TLI = 0.780$ ) indicated moderately fit model to physical infrastructure ( $X^2 = 2277$  ( $df = 90$ ),  $RMSEA = 0.130$ ,  $CFI = 0.705$  and  $TLI = 0.655$ ). These showed moderately fit models to the data. Lastly, the domain of WASH ( $X^2 = 3073$  ( $df = 54$ ),  $RMSEA = 0.197$ ,  $CFI = 0.538$  and  $TLI = 0.435$ ) indicated a poor fit model, as the data were not converged properly and the factor loading of items was very low. Poor goodness of fit indices indicated that items under umbrella of the WASH domain were not providing enough empirical evidence. As mentioned above, the likely reason could be the fact that many items in this domain were not observed or were not available in the Anganwadi centres on the day of observation.

Arbuckle (2005) mentioned that models with overall fit indices of less than 0.9 can usually be improved substantially. Bentler and Bonett (1980) pointed out that TLI values close to 1 indicate a very good fit. Overall, it can be said that separate EFAs of every domain produced sound results, except WASH and physical infrastructure, and this could be because the sampled Anganwadi centres were from one state and the condition of physical infrastructure and availability of WASH facilities were uniform across the state.

## Confirmatory Factor Analysis (Phase 2)

### Study 2 and Sample

The study was conducted in the rural and urban areas of five selected states, namely, Bihar, Delhi, Jharkhand, Odisha & Rajasthan. From the diverse universe, the study was conducted in 182 Anganwadi centres (AWC) which were observed for the entire duration of their functioning (2-3 hours) to understand the quality provisions of ECE programme.

## Measure

The Anganwadi Assessment Scale (AAS) had six dimensions, namely, Physical infrastructure, WASH facilities, Child friendly preschool environment, Curriculum transaction, Teacher-child interactions and Safety of children. There were a total of 63 items in the scale and the observers were required to rate the responses on a three point rating scale, as detailed earlier.

## Results

The most rigorous method of confirming factorial structure of the scale is confirmatory factor analysis techniques (CFA's). The CFA was applied for establishing the construct validity of scale. The fit model of CFA was evaluated using the same amalgamation of absolute and incremental indices as used in EFA. Using the same scale containing sixty three (63) items, measuring different domains of quality provision of ECE programme, were used.

FIGURE 1  
The Structure Model

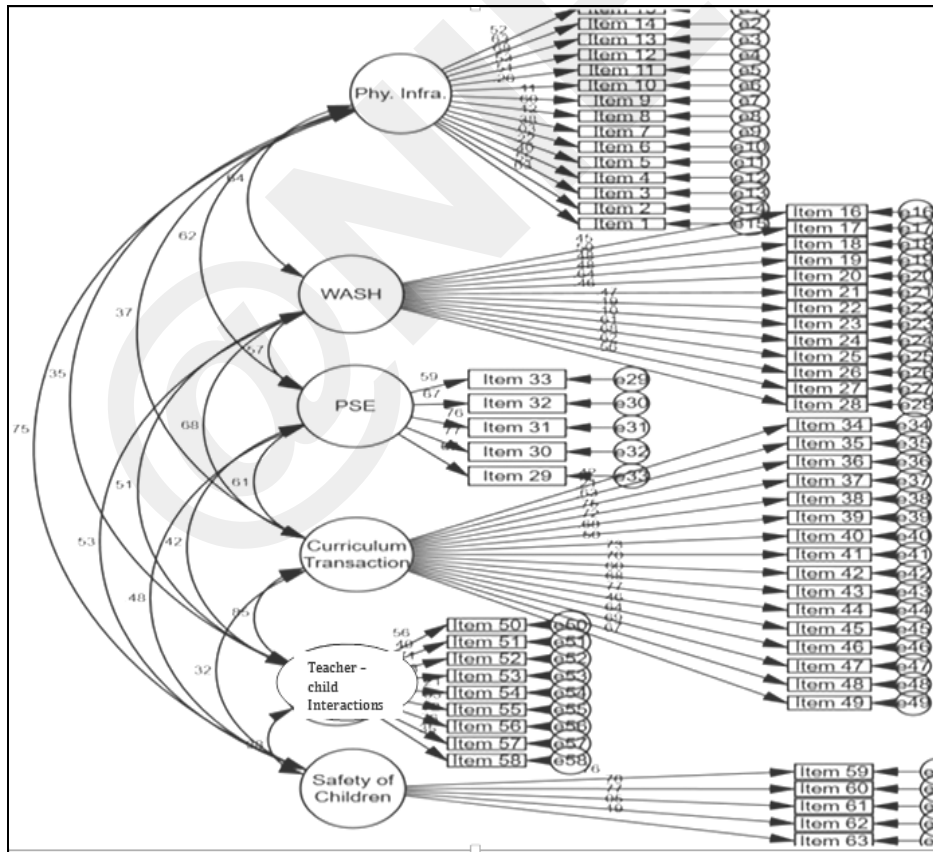


TABLE 3

**Goodness of Fit Statistics of CFA 63 Items in Anganwadi Assessment Scale**

<i>Model</i>	<i>NPAR</i>	<i>CMIN</i>	<i>DF</i>	<i>P</i>	<i>CMIN/DF</i>
Default model	204	3779.147	1875	.001	2.016
Saturated model	2079	.000	0		
Independence model	63	6947.658	2016	.001	3.446

In the confirmatory factor analysis (CFA) through SEM, if the value of chi-square is relatively small, that means it supports the tested proposed theoretical model. In above model (Figure 1 & Table 3), the value of  $\chi^2$  is 3779.147 which is small as compared to value 6947.658 of independence model. But chi-square ( $\chi^2$ ) divided by degrees of freedom (df) is suggested as a better fit metric (Bentler and Bonnett, 1980). Values of less than 5 for the  $\chi^2/df$  ratio indicated acceptable model fit (Wheaton *et al*, 1977). From the current CFA model, as shown in Table 2,  $\chi^2/df$  was 2.016 ( $\chi^2= 3779.147$ ;  $df = 1875$ ), which suggested an acceptable model fit.

Other common model-fit measures were also used to assess the model's overall goodness of fit from the data. The values for Normed Fit Index (NFI), Tucker Lewis Index (TLI) and Comparative Fit Index (CFI) and were found to be 0.45, 0.585 and 0.614, respectively, which indicated that the model of interest improves the fit between 45 per cent – 59 per cent relative to the null model which revealed slightly lack of model fit whereas CFI (0.614) indicated moderate fit model as it close to  $\geq .90$ .

The value of RMSEA was 0.074, which is slightly lower than the .08 indicated a good model fit. According to Schumacker and Lomax (2010), the root-mean-square error (RMSEA) should be between .05 and .08.



TABLE 4

**Covariance and Correlational Estimates of Default Model**

	<i>Estimate</i>	<i>S.E.</i>	<i>C.R.</i>	<i>P</i>	<i>Label</i>	<i>Correlation Estimate</i>
Domain1 <--> Domain2	0.103	0.026	3.924	***	Accepted	.641**
Domain1 <--> Domain3	0.112	0.026	4.323	***	Accepted	.620**
Domain1 <--> Domain4	0.058	0.018	3.161	0.002	Accepted	.373**
Domain1 <--> Domain5	0.048	0.015	3.181	0.001	Accepted	.353**
Domain6 <--> Domain1	0.193	0.039	4.996	***	Accepted	.751**
Domain2 <--> Domain3	0.087	0.022	3.935	***	Accepted	.575**
Domain2 <--> Domain4	0.089	0.024	3.735	***	Accepted	.678**
Domain2 <--> Domain5	0.059	0.016	3.713	***	Accepted	.514**
Domain6 <--> Domain2	0.115	0.029	4.017	***	Accepted	.534**
Domain3 <--> Domain4	0.09	0.022	4.001	***	Accepted	.612**
Domain3 <--> Domain5	0.054	0.015	3.653	***	Accepted	.420**
Domain6 <--> Domain3	0.117	0.028	4.246	***	Accepted	.484**
Domain4 <--> Domain5	0.094	0.022	4.26	***	Accepted	.851**
Domain6 <--> Domain4	0.066	0.022	3.033	0.002	Accepted	.318**
Domain6 <--> Domain5	0.069	0.019	3.544	***	Accepted	.378**

The above Table 4 indicated the standardised estimates and covariance between the latent constructs. The inter-factor correlation between the latent constructs ranging from .318 - .851 for all the latent factors. The correlation estimates between the inter-factor constructs with each other were found to be statistically significant. It establishes the factorial validity which is an extension of content validity, because it validates the contents of the construct employing the statistical model called factor analysis (Engel & Schutt, 2013).

## Reliability Estimation

In psychology or education, reliability is the extent to which a test, observation tool, etc, produces the similar results over a period of time. In other words, it can be said that reliability is the consistency of scores over time on particular test or across raters. The internal consistency of the Anganwadi Assessment Scale (AAS) was assessed at the subscale level and for the total scale. Each subscale of scale is intended to assess a specific aspect of quality provision of ECE programme, while the total scale is an indicator of the overall quality provision at Anganwadis in terms of infrastructure, WASH facilities for children,

curriculum transaction and pedagogical process, etc. Kubiszyn and Borich (2003) argued that the internal consistency of an instrument refers to the ability of scores from the instrument to provide a measure a single concept.

TABLE 5

**Cronbach's Alpha Coefficient for Internal Consistency of the Subscales and for Overall Anganwadi Assessment Scale**

<i>S. No.</i>	<i>Domains</i>	<i>No. of Items</i>	<i>Cronbach's alpha (<math>\alpha</math>)</i>
1.	Physical Infrastructure	15	.75
2.	Water, Sanitation & Hygiene (WASH)	13	.81
3.	Child Friendly Preschool Environment	05	.82
4.	Curriculum Transaction	16	.91
5.	Teacher-Child Interactions	09	.78
6.	Child Protection & Safety	05	.61
Overall	Anganwadi Assessment Scale	63 Items	.93

Spearman Brown Coefficient = .78 and Guttman Split-Half Coefficient = .776

As shown in Table 5 above, internal consistency scores for the subscales of the AAS ranging from .61 to .91, whereas, internal consistency for the overall scale is .93. The Cronbach's alpha reliability coefficient normally ranges between 0 and 1 and the value closer to 1.0 indicates the good the internal consistency of the items in the scale, as found. George and Mallery (2003) provide the following rules of thumb: “\_ > .9 – Excellent, \_ > .8 – Good, \_ > .7 – Acceptable, \_ > .6 – Questionable, \_ > .5 – Poor, and \_ < .5 – Unacceptable” (p. 231). The findings represent good reliability of the tool at the item level (Hair *et al*, 2011).

TABLE 6  
**Correlation between the Domains of Anganwadi Assessment Scale and  
 Other Variables of the Tool**

Variables	<i>Phy. Infra</i>	<i>WASH</i>	<i>PSE</i>	<i>C.T</i>	<i>C.P</i>	<i>SoC</i>
Availability of Teaching Learning Material	.386**	.416**	.554**	.474**	.231**	.285**
Storytelling by Teacher	.113	.316**	.361**	.555**	.419**	.096
Storytelling by Children	-.012	.051	.140	.307**	.158*	-.135
Rhymes and Songs	.179*	.273**	.275**	.394**	.452**	.187*
Dramatisation/Role Play/Puppet Play	.196**	.148*	.347**	.280**	.163*	.153*
Colouring /Drawing /Painting	.140	.266**	.238**	.292**	.176*	.172*
Clay Work/Sand Play	.089	.193**	.177*	.301**	.058	.097
Indoor games	.197**	.248**	.224**	.355**	.371**	.212**
Outdoor Play	.184*	.293**	.147*	.249**	.166*	.139
Pre-Reading Activity	.086	.196**	.235**	.411**	.213**	.058
Pre-Writing Activity	.092	.133	.222**	.256**	.143	.111
Pre-Number Activity	.137	.220**	.164*	.425**	.254**	.199**
Formal Reading Activity	.113	.166*	.180*	.249**	.232**	-.026
Formal Writing Activity	.130	.146*	.197**	.180*	.025	-.031
Formal Number Activity	.130	.127	.125	.232**	.205**	.059
Free Play with Materials (Without AWW's Guidance)	.151*	.331**	.278**	.426**	.221**	.094
Guided Play with Material (Under AWW's Guidance)	.121	.331**	.328**	.481**	.322**	.089
Routine Activities	.198**	.233**	.162*	.327**	.288**	.109

Before item generation literature, a review was done and other national and international tools for quality provisions for ECE programme were reviewed as this is an important part of the content validation of the scale. The judgement approach was adopted to establish the content validity of the tool and the tool was evaluated by a panel of four subject experts so that the contents of items should reflect how well it measures the quality indicators of good Anganwadi centres which includes physical infrastructure, WASH

facilities, preschool environment, curriculum transaction and teacher-child interactions and safety of the children. Straub, Boudreau and Gefen (2004) mentioned that items in an instrument should reflect the content universe to which the instrument will be generalised. Table 6 above indicated a positive and significant relationship with the other variables of the scale.

Based on the reliability theories, Cronbach's alpha, Spearman Brown Coefficient and Split-Half Coefficient were calculated. Results showed that Cronbach's alpha for all the domains of the tool were between .61 to .91 and for the overall tool it was found to be .93 which indicated good reliability, whereas other measure of reliability such as Spearman Brown Coefficient (.78) and Guttman Split-Half Coefficient (.776) were also found good and acceptable reliability. In behavioural sciences, high reliability ( $\geq 0.70$ ) of the tool indicates a low measurement error variance.

Confirmatory factor analysis (CFA) was used to establish factor structure from the data. The results supported six factor models as fit for 63 items. Goodness of fit indices and parsimony indices (chi-square,  $\chi^2/df$  and RMSEA) were excellent, and were to fit a valid model. It supports the sound evidence of convergent validity in which the standardised estimates were relatively large for each set of indicators. Additionally, the inter-factor correlation is quite large so that support factorial validity is also strong. As Engel and Schutt (2003) argued, in the analysis of factorial validity, the several items put up to measure a particular dimension within a construct of interest are supposed to be more closely related to one another than those measuring other dimensions.

## **Conclusion & Implications of Anganwadi Assessment Scale (AAS)**

The Anganwadi Assessment Scale (AAS) is a new observation based instrument that measures the overall quality of early childhood programmes and six factors or subscales of quality provision. A rigorous process has been followed for the development and testing of psychometric properties of AAS. The results indicate that the internal consistency of the subscales ranged from 0.61 to 0.91 and the overall Cronbach's alpha reliability of the scale was found to be 0.93. The results from confirmatory factor analysis inform that the tool showed an overall satisfactory evidence of both convergent and factorial validity.

The early years are globally acknowledged to be critical in life and have gained considerable attention in the last two decades --- both at national and international level. The National Early Childhood Education Policy which came in 2013 highlighted quality preschool education, and even the draft National Education Policy (2020) focussed on ECCE and its importance. In India, the government has laid down the quality indicators for Anganwadi centres (ECE programme) but as yet no standardised and culturally relevant tool is available to assess the Anganwadi centres on quality parameters.

The development of the Anganwadi Assessment Scale (AAS) for assessing the quality of early childhood programmes will therefore be highly beneficial in future research; this may help us compare the quality of ECE programme across different geographical regions as ICDS is universal across all states. The span of observation during the administration of the tool is adequate (neither too long nor too short). The scale may be utilised to identify the good practice models, and assess the relationships between quality of ECE programmes and children's learning outcomes. The results will provide the broad spectrum of quality parameters which should be present in the Anganwadi centres or ECE programme. This tool

will help the stakeholders to identify the gaps in the existing programme, to identify the training needs, assess the availability of the teaching learning material, and frame the age-specific and developmentally appropriate activities which could be a part of the curriculum. This tool can be used for evaluation of the running ECE programme so as to improve the quality of provisions in India.

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## Internet Addiction and Depression among Undergraduate Students of DU Colleges during COVID

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### Abstract

COVID - 19 has impacted the whole world and in several ways. There has been pain, anguish, and suffering across all age groups and among all strata of society. During this period people resorted to various means to cope with the situation. Technology came to their rescue and internet emerged as a major tool to deal with the present situation. However, excessive use of internet soon gave way to internet addiction. While the pandemic created states of anxiety and depression among a large section of population, these feelings got further compounded by an excessive use of internet. The young generation, especially the student population, was considerably impacted by this unprecedented event. A major shift in their mode of education, from offline to online mode, not only created more opportunities to go online; rather their overall hours on internet also considerably increased. This study investigated the extent of internet addiction, prevalence of depression and the relationship between internet addiction and depression among undergraduate students during the COVID-19 pandemic. In all, 713 students from various colleges of the University of Delhi, India, were screened for internet addiction and depression. Two questionnaires, Internet Addiction Test (IAT) (Young,1998) and PHQ-9 (Spitzer, Williams & Kroenke,1999) were administered to the students. The data were analysed by using the demographic profile of the students, descriptive statistics, t-test, and multiple regression on SPSS.

Results show that more than 64 per cent students had mild to moderate internet addiction. Out of 713 students, more than 41per cent students had mild to moderate depression, while more than 15 per cent students were suffering from moderately severe to severe depression. Gender difference was found in the

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prevalence of depression and Neglect Social Life construct of IAT. Female students had a higher mean level of depression as compared to male students by 20.58 per cent. Male students had a higher Neglect Social Life in comparison to female students by 30.68 per cent.

Internet addiction was a predictor of depression in undergraduate students. The three constructs of Internet Addiction Test – Excessive Use, Neglect Work and Neglect Social Life – were overall predictors of depression in these undergraduate students. The findings point towards an urgent need to create Social Emotional Learning Models in universities and colleges that enable a balanced use of digital technology.

## Introduction

The last few decades have seen an active engagement of global population with internet. The number of people using the internet has rapidly increased around the world. The number of internet users in India have increased from 5.0 million in 2000 to 755 million by March 31, 2021, an increase by 151 times. A majority of internet users in India are young people. This has resulted in widespread internet addiction and increase in the feelings of loneliness, anxiety and depression, especially in late adolescents and emerging adults (Vanucci, 2017; Mathew Lapierre, 2019). Internet Addiction Disorder (IAD) wreaks havoc on people's life by producing neurological complications, psychological disturbances, and social problems (Cash *et al*, 2012).

Since the onset of the pandemic in 2020, the use of internet has increased exponentially. During the lockdown, not only most of the work went online, internet has also emerged as a major source of entertainment.

Apart from this, the psychological impact of COVID-19 pandemic on people has been immense. Especially, the student population has experienced a considerable impact on their psychological health. There are several reasons for this psychological impact, like loss of a loved one, social isolation, fear of the virus, feeling of uncertainty. Besides these, a major reason for this psychological impact is complete change in the established mode of education of students. (Browning *et al*, 2021). In India, not only are the students taking classes online, their assignments, examinations, reference work have also gone on the internet. After prolonged hours of their online studies, several hours are spent on the internet to catch up on the social media platforms, watching movies and web series to relax and unwind. As a result, an average student in India is spending close to 10 to 12 hours daily on the internet. This is causing overdependence on the internet for work as well as entertainment, which is widely resulting into internet addiction.

The overuse of internet has negatively impacted people, especially the youth. (Dong Huixi *et al*, 2020). Moreover, the overuse of internet during the pandemic has increased their anxiety levels (Jiang Yan, 2021).

The global trends in research on depression indicate a seven times increase in the level of depression in a majority of the world population because of the immense psychological impact of Covid. (Bueno Novitol, 2020). A major part of this depression is due to internet addiction. Internet addiction had been showing a significant correlation with the psychological wellbeing of students much before the onset of the Covid 19 pandemic. A large number of studies showed a significant correlation between internet addiction and



depression among undergraduate students across the world. But the impact of internet addiction on college students as a distinct group has now become a major public health concern (Shaoetal, 2018). However, studies on Internet addiction and its associated risks among the undergraduate students in India, before and during Covid, are still scarce. The purpose of this research was to study the impact of internet addiction on depression and the prevalence of internet addiction and depression among undergraduate students of colleges of University of Delhi in Delhi, India.

## Objectives of the Study

The objectives of this study are as follows:

- a. To assess internet addiction among undergraduate students using Internet Addiction Test (IAT).
- b. To assess the presence and severity of depression among undergraduate students using PHQ-9(Patient Health Questionnaire).
- c. To assess the impact of internet addiction on depression among undergraduate students during the COVID - 19 period.

## Methodology

### Sample

The sample for this study consisted of 713 undergraduate students of the colleges affiliated to the University of Delhi, India, selected by the random sampling technique. A majority of the respondents were aged between 19 to 20 years, which is 61.85 per cent of the sample population. Out of these, 58.06 per cent respondents were male and 41.94 per cent were female.

### Collection of Data

Data were collected by administration of two questionnaires: The Internet Addiction Test (IAT) (Young, 1998) and PHQ-9 (Janet, B W Williams & Kurt Kroenke, J, 1999).

The Internet Addiction Test (IAT) is a 20-item questionnaire on a 6-point Likert scale. The total IAT score is the sum of the rating given by respondents for the 20 items. The range of scores is 0 – 100. The severity of internet addiction depends on the score: the, higher the score, the higher is the severity of internet addiction. Scores ranging from 0 – 30 points reflect a normal level of internet use; 31 to 49 points reflect a mild degree of internet addiction; 50 to 79 points indicate the presence of a moderate level and 80 to 100 points indicate a severe level of internet addiction.

The PHQ-9 is a 9-item questionnaire. The total PHQ-9 score is the sum of the rating given by respondents for the 9 items. The range of the scores is 0 – 27. The severity of depression depends on the score: the, higher the score, the higher is the severity of depression. Scores ranging from 5 to 9 points reflect a mild degree of depression; 10 to 14 points reflect a moderate level of depression; 15 to 19 points reflect the presence of a

moderately severe level of depression and 20 to 27 points reflect a severe level of depression.

The above questionnaires were administered to the students online, through google forms. Information related to their demographic profile like age, sex and class was also gathered through the same questionnaire. The students were assured complete confidentiality of their responses through the instructions on the questionnaire.

### Statistical Analysis

Analysis was done by using MS Excel and SPSS 23.0. Frequencies and percentages have been calculated for the demographic profile of the sample. Mean, SD, t-test were used to study the prevalence of internet addiction and depression. Multiple regression analysis using the six constructs of IAT was done to study the impact of internet addiction on depression. With the use of multiple regression analysis, impact of each of the six constructs of internet addiction, namely salience, excessive use, neglect work, anticipation, lack of control, neglect of social life on depression could be observed independently. It is important here to clarify that the purpose of the present study was to observe the impact of internet addiction as an independent variable on depression, the dependant variable. Multiple regression analysis was used to predict the degree or the strength to which each construct of internet addiction impacted depression in the current sample.

### Findings

In the present study, the data obtained from 713 students were used to analyse the results. A majority of the respondents were aged between 19 to 20 years, which is 61.85 per cent of the sample population. Out of these, 58.06 per cent respondents were male and 41.94 per cent were female.

The IAT scores show that 35.06 per cent of the students had mild levels of internet addiction, 29 per cent students had moderate levels of internet addiction and only 0.9 per cent students were severely addicted to internet, while 34 per cent of the students showed normal use of internet.

The PHQ - 9 scores of the students show that 33.65 per cent students had mild depression, 25.11 per cent had moderate depression, 11.4 per cent students had moderately severe depression and 3.50 per cent students had severe depression, while 26.10 per cent students had no depression.

Item-wise analysis of IAT (see Appendix - 2) shows that 5 items (variables) (out of total 20 items) have the maximum mean scores.

- Staying online longer than they intended, IAT 1 Mean = 2.96 (SD =1.51).
- Extended their time on internet, IAT 16 Mean = 2.57 (SD =1.64).
- Life without internet would be boring empty and joyless, IAT 12 Mean = 2.42 (SD = 1.709).
- A strong desire in students to cut down on their internet time and their inability to do so, IAT 17 Mean = 2.41 (SD =1.72).
- Insomnia because of the time spent on online activities, IAT 14 Mean = 2.19 (SD =1.599).

Item-wise analysis of PHQ-9 (see Appendix - 3) shows that 3 variables (out of total 9 variables) have maximum mean scores.

- Trouble falling asleep or sleeping too much, PHQ 3 Mean = 1.31 (SD = 1.21)
- Having little interest or pleasure in doing things PHQ 1 Mean = 1.28 (SD = 0.959)
- Feeling tired and having little energy PHQ 4 Mean = 1.25 (SD = 1.037)

## Descriptive Statistics

TABLE 1

	<i>Gender</i>	<i>N</i>	<i>Mean</i>	<i>Std. Deviation</i>	<i>Std. Error Mean</i>
Total PHQ (max 27)	Male	414	7.97	5.531	.272
	Female	299	9.61	5.124	.296
Total IAT (max 100)	Male	414	39.77	17.952	.882
	Female	299	39.18	17.259	.998
Saliency IAT (max 25)	Male	414	9.6159	5.25752	.25839
	Female	299	9.6455	5.14110	.29732
Excessive use IAT	Male	414	11.0048	5.37098	.26397
	Female	299	10.6187	5.19955	.30070
Neglect work IAT	Male	414	5.5242	3.40675	.16743
	Female	299	5.4883	3.60588	.20853
Anticipation IAT	Male	414	3.9300	2.40206	.11805
	Female	299	3.9732	2.19959	.12721
Lack of control IAT	Male	414	6.9928	3.93807	.19355
	Female	299	7.3813	3.90428	.22579
Neglect of social life IAT	Male	414	2.7053	2.33825	.11492
	Female	299	2.0702	2.11381	.12224

TABLE 2

		<i>t-test for Equality of Means</i>				
		<i>t</i>	<i>Df</i>	<i>Sig. (2-tailed)</i>	<i>Mean Difference</i>	<i>Std. Error Difference</i>
Total PHQ	Equal variances assumed	-4.037	711	.000	-1.643	.407
	Equal variances not assumed	-4.087	668.823	.000	-1.643	.402
Total IAT	Equal variances assumed	.444	711	.657	.596	1.341
	Equal variances not assumed	.447	656.453	.655	.596	1.332
Salience IAT	Equal variances assumed	-.075	711	.940	-.02954	.39534
	Equal variances not assumed	-.075	650.427	.940	-.02954	.39391
Excessive use IAT	Equal variances assumed	.960	711	.337	.38610	.40222
	Equal variances not assumed	.965	654.018	.335	.38610	.40012
Neglect work IAT	Equal variances assumed	.135	711	.892	.03586	.26499
	Equal variances not assumed	.134	620.111	.893	.03586	.26743
Anticipation IAT	Equal variances assumed	-.246	711	.806	-.04329	.17603
	Equal variances not assumed	-.249	672.455	.803	-.04329	.17355
Lack of control IAT	Equal variances assumed	-1.305	711	.192	-.38852	.29780
	Equal variances not assumed	-1.306	645.395	.192	-.38852	.29739
Neglect social life IAT	Equal variances assumed	3.724	711	.000	.63508	.17053
	Equal variances not assumed	3.785	676.319	.000	.63508	.16778

The above scores show a significant difference in depression (PHQ-9 scores) between males and females (Table - 1, Table - 2 above). The mean scores of Total PHQ scores of males is 7.97 (SD = 5.531) and females is 9.61 (SD = 5.124),  $t = -4.037$ , ( $p < .001$ ), is way below the significance level = .005. The IAT is divided into six constructs, Significant gender difference was found for the construct neglect of social life, Mean scores of males 2.70

(SD = 2.33), mean scores of females 2.07 (SD = 2.11),  $t = 3.72$ , ( $p < .001$ ), is way below the significance level = .005.

A multiple linear regression was calculated to predict depression based on six constructs of IAT. A significant regression equation was found  $F(6,706) = 50.806$ ,  $p < .001$  with an R square of .302. Prediction of students' depression is equal to 2.392; -.213 (Negative social life) +.283 (Neglect work) +.310 (Excessive use). Results show that Negative social life, Neglect work and Excessive use were significant predictors of depression in these students.

#### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.549 <sup>a</sup>	.302	.296	4.550

a. Predictors: (Constant), negsclfeIAT, antcpnIAT, lckcontrlIAT, negwrkIAT, salienceIAT, excesuseIAT

#### ANOVA<sup>a</sup>

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	6310.143	6	1051.691	50.806	.000 <sup>b</sup>
Residual	14614.356	706	20.700		
Total	20924.499	712			

a. Dependent Variable: Total PHQ

b. Predictors: (Constant), negsclfeIAT, antcpnIAT, lckcontrlIAT, negwrkIAT, salience IAT, excesuseIAT

#### Coefficients<sup>a</sup>

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	2.392	.426		5.610	.000
1 salienceIAT	.067	.051	.065	1.322	.187
excesuseIAT	.310	.053	.303	5.874	.000
negwrkIAT	.283	.067	.182	4.231	.000
AntcpnIAT	.117	.091	.050	1.297	.195
lckcontrlIAT	.105	.063	.076	1.668	.096
negsclfeIAT	-.213	.081	-.089	-2.622	.009

a. Dependent Variable: TotalPHQ

## Discussion

Internet has become the biggest boon of our times. The world has not only shrunk with the use of internet, but it has also proven to be a lifeline for many people during the pandemic. This is reflected in the ten times increase in the use of digital platforms like Zoom and 30 per cent increase in the engagement of content delivery services like Akami during the pandemic (Branscombe, 2020). The present study found approximately 206 students falling in the category of moderate internet addiction and 64 students in the severe category.

While internet greatly facilitated coping with the pandemic, excessive use of internet, negatively impacted the mental and physical health of the people and depression is one of them. (Kiraly *et al*, 2020; Meyer *et al*, 2020).

Gender differences in depression exist to the tune of 5.8 per cent in females to 3.5 per cent in males (Ferrari *et al*, 2013). Gender differences in depression peak during adolescence and become stable through adulthood (Salk, Hyde, & Abramson, 2017). This could be one of the reasons for more females experiencing depression in this sample of students.

Several studies especially conducted in Asia have shown pathological use of internet to be related with depression and symptoms of attention deficit hyperactivity disorder (Carli *et al*, 2012; Lai *et al*, 2015). Depression and insomnia are found more in adolescents having Internet addiction in India (Goel, Subramanyam & Kamath, 2013).

That depression is the antecedent of internet addiction is clear by the multiple regression analysis, where three constructs of IAT, namely neglect social life, neglect work and excessive use, were found to be the predictors of depression in this sample. Internet addicts are lonelier, have lower self-esteem and faulty social relationships (Lily, Mehrnaz & Alireza, 2008). Internet addicts spend more and more time in the virtual world and as a result form several virtual relationships, which impacts their real-life relationships (Underwood & Findlay, 2004). Internet addiction leads to a decline in the interaction with family members, reduced social circle and depression (Kraut *et al*, 1998). The depression, anxiety and hostility increase due to internet addiction (Dong *et al*, 2011). Studies report that internet addiction results in decrease in productivity and more leisure time engagement (Éilish & Christian, 2017). A study on urban undergraduate students in Assam (India) by Saikia *et al*, (2019) reports internet addiction as a cause of depression, anxiety, and stress. In a similar study, on 300 students in Turkey (Akin & Iskender, 2011) reported Internet addiction to be a predictor of depression, stress and anxiety.

Heavy users of internet are likely to be more lonely, physically ill, introverted and depressed (Chen & Peng, 2008). In line with these findings, the present study reveals that internet addiction causes neglect of social life, which may cause introversion in heavy users leading to depression. The findings of the present study are further corroborated by a study on adolescents (Veisani, Jalilian, & Mohamadian, 2020) where excessive use of internet, lack of control, and neglect of social life were found to have a positive correlation with depression and other mental health conditions.

In a study using multiple regression analysis and correlation, Cardak (2013) reported that internet addiction among college students was affecting their psychological wellbeing. Here psychological wellbeing was represented by feelings of loneliness, depression, impulse control, social comfort and distraction. It is important to note that Depression was a component of psychological wellbeing in the study by Cardak.

Much before the onset of the Covid - 19 pandemic, in a study on college students (Kandall, 2009), internet addiction was observed as an outcome of excessive use of the internet. Internet addiction was defined as feelings of anxiety and depression in the absence of access to the virtual world. This shows that even in the preliminary stages of exploration of internet addiction, depression emerged as one of the major consequences of internet addiction.

Ko et al, (2008), in a study of 216 Taiwanese college students, found internet addiction to be associated with depressive disorders, attention deficit, hyperactivity disorder and social phobia. Surprisingly, the study found depressive disorder to be more prevalent among male students in comparison to female students.

Bahrainian *et al*, (2014), in a study on 408 students, found that 40.7 per cent students had internet addiction. It was found that internet addiction had a high correlation with depression and self-esteem.

The present study finds support in the above cited studies where constructs of internet addiction like neglect of social life, neglect of work and excessive use of internet emerge as significant predictors of depression.

Baturay and Toker, (2019), in a study on 159 undergraduate college students, found that internet addiction caused feelings of low self-esteem, low self-confidence, low self-efficacy and loneliness. Several studies show that all these components put together may lead to depression.

There is plethora of evidence to support that internet addiction has a strong presence in educational settings and that it negatively impacts the psychological and emotional well-being of the younger generation. Since the students have to spend long hours online to study, complete their projects and assignments, it is difficult to escape the negative impact of time spent online. Due to the increased use of the social media platforms, there is a strong craving among the students to catch up with their friends on these social media platforms as well. This leads to driving the already internet fatigued student population, to spend over and above the number of hours required for them to complete their work. Studies also show that excessive use of internet drives these students towards social isolation. It is a paradox where, on one side they feel virtually connected with a lot of people and at the same time they are getting isolated from the real people around them. As a result, feelings of loneliness and depression surface sooner or later in them.

In an article, (Greenberg et al, 2017) show the effectiveness of social emotional learning in educational settings to prevent the onset of depression and anxiety in students, and then justify its need on a large scale across all educational institutions as 'prevention paradox.' Social emotional learning in educational institutions prevents depression in adolescents (Hannelore Reichera & Marlies Matischek-Jaukb, 2017).

Whereas, on one side, the present study reports depression to be a consequence of internet addiction, there are several studies that report depression to be a predictor of internet addiction among college students. Living away from homes, peer pressure and academic pressure are some factors that lead to depression in students in higher educational settings. In a study (Omer, *et al*, 2014) on 720 students at Bulent Ecevit University English Preparatory school; depression, internet usage and perfectionist attitude were found to be predictors of internet addiction. These results indicate a strong correlation between internet addiction and depression among the student population. The same study stressed on the

need to look at self-esteem, depression and dysfunctional attitude during cognitive behaviour therapy while dealing with internet addiction in the student population.

In an article, (Liu, Nie & Wang, (2017) reported the positive effects of group counselling programmes, cognitive behaviour therapy and sports intervention on internet addiction. In 58 randomised controlled trials on 2871 participants, it was found that group counselling helped the internet addicts to deal with time management, interpersonal issues, their health and impulse control, tolerance. Cognitive behaviour therapy helped the participants to deal with their depression, anxiety, social insecurity. The sports intervention helped with the initial withdrawal symptoms of internet addiction. All these three interventions facilitated in reducing internet addiction.

That depression is significantly correlated with internet addiction has been amply demonstrated by the pre-Covid studies on students as well as post-Covid studies in higher educational settings.

The findings of the present study strongly underline the need for early identification of internet addiction and depression among students in order to plan for timely intervention and relief to the students by their teachers and educational institutes, through social emotional learning models.

## Practical Implications

In this new era, young people are more exposed to the internet and use it as a primary means of social interaction (Goel *et al.*, 2013). From the present study, internet addiction was found closely associated with depression. This draws attention towards the need to focus on the mental health of undergraduate students and to counsel them about responsible ways to use internet. This study suggests several implications for future research. Considering the prevalence of internet addiction and depression among college students, more studies are required to explore the underlying factors of internet addiction by collecting data from multiple colleges across the country.

This study provides an insight for practitioners to address the issue of overuse of internet in clinical settings. Further, it may help the researchers, educators and administrators in educational institutions to develop a sound framework using Social Emotional Learning (SEL) models to support students who are suffering from internet addiction and depression.

When a student is unable to make friends or communicate effectively with family members or outside world, it is likely to affect their self-esteem, induce social isolation, emotional fragility leading to frustration and depression. Real-life interactions are far superior to virtual interactions for the learning and development of undergraduate students. This study will help parents of undergraduate students to be alert to the changing behaviour of their children over a period of time and help them effectively monitor their use of internet through increased real-time interactions and counselling for responsible use of internet.

The present study may pave the way for colleges and other educational institutions to organise mental health programmes periodically to counsel students about the excessive use of internet and its impact. Proper training needs to be imparted to faculty members of all departments to identify the symptoms of depression and internet addiction among undergraduate students, followed by counselling sessions for these students at regular intervals. Furthermore, colleges may consider setting up a committee for monitoring these



health programmes and sign MOUs with various hospitals for proactive action in case of severely depressed and severe internet addict students.

## Conclusion

After controlling for socio-demographic and other health-related factors, the study provides evidence that internet addiction is a major cause of depression among people. These findings might be of interest to educators and health care professionals in developing health care initiatives to reduce the risk of internet addiction and depression.

## Limitations of the Study

The cross-sectional design of this study, as well as the fact that it was conducted in a few colleges of the University of Delhi, on only undergraduate students, are limitations of this study. Hence, these findings cannot be generalised to the entire population. To generalise the outcome of the study, more research needs to be conducted at other public and private colleges across the universities. Also, longitudinal studies with larger samples of all age groups, need to be conducted. Assessment of internet addiction and depression has been conducted only on urban population and hence, it will be worthwhile to conduct a similar study on rural segment also. Finally, because self-reported questionnaires, which rely on respondents' subjective self-examination, were used, response bias was unavoidable.

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## Appendices

TABLE 1  
Demographic Profile of Respondents

<i>Particular</i>	<i>Frequency</i>	<i>Percent</i>
Age Group of Respondents		
18 years or below	140	19.64 per cent
19 years to 20 years	441	61.85 per cent
20 years and above	132	18.51 per cent
Gender of Respondents		
Male	414	58.06 per cent
Female	299	41.94 per cent

TABLE 2  
Descriptive Statistics of Internet Addiction Test (IAT)

<i>Code</i>	<i>Variable</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>Std. Deviation</i>
IAT1	How often do you find that you stay online longer than you intended?	0	5	2.96	1.516
IAT2	How often do you neglect household chores to spend more time online?	0	5	2.15	1.461
IAT3	How often do you prefer the excitement of the Internet to intimacy with your partner?	0	5	1.19	1.543
IAT4	How often do you form new relationships with fellow online users?	0	5	1.25	1.263
IAT5	How often do others in your life complain to you about the amount of time you spend online?	0	5	2.17	1.610
IAT6	How often do your grades or school work suffer because of the amount of time you spend online?	0	5	1.93	1.563
IAT7	How often do you check your email before something else that you need to do?	0	5	2.04	1.470
IAT8	How often does your job performance or productivity suffer because of the Internet?	0	5	1.83	1.603
IAT9	How often do you become defensive or secretive when anyone asks you what you do online?	0	5	1.75	1.546
IAT10	How often do you block out disturbing thoughts about your life with soothing thoughts of the Internet?	0	5	2.08	1.544
IAT11	How often do you find yourself anticipating when you will go online again?	0	5	1.91	1.505

Cont...

Internet Addiction and Depression among Undergraduate Students of DU Colleges during COVID

IAT12	How often do you fear that life without the Internet would be boring, empty, and joyless?	0	5	2.42	1.709
IAT13	How often do you snap, yell, or act annoyed if someone bothers you while you are online?	0	5	1.78	1.483
IAT14	How often do you lose sleep due to being online?	0	5	2.19	1.599
IAT15	How often do you feel preoccupied with the Internet when off-line, or fantasise about being online?	0	5	1.65	1.422
IAT16	How often do you find yourself saying "just a few more minutes" when online?	0	5	2.57	1.614
IAT17	How often do you try to cut down the amount of time you spend online and fail?	0	5	2.41	1.723
IAT18	How often do you try to hide how long you've been online?	0	5	1.89	1.622
IAT19	How often do you choose to spend more time online over going out with others?	0	5	1.71	1.473
IAT20	How often do you feel depressed, moody, or nervous when you are off-line, which goes away once you are back online?	0	5	1.65	1.516

Source: Kimberly S Young and Rober C Rogers (1998)

TABLE 3  
Descriptive Statistics of PHQ-9

Code	Variable	Min	Max	Mean	Std. Deviation
PHQ 1	Little interest or pleasure in doing things.	0	3	1.28	.959
PHQ 2	Feeling down, depressed, or hopeless.	0	3	1.03	.969
PHQ 3	Trouble falling or staying asleep, sleeping too much.	0	3	1.31	1.121
PHQ 4	Feeling tired or having little energy.	0	3	1.25	1.037
PHQ 5	Poor appetite or overeating.	0	3	.82	.989
PHQ 6	Feeling bad about yourself or that you are a failure or have let yourself or your family down.	0	3	.93	1.043
PHQ 7	Trouble concentrating on things, such as reading the newspaper or watching television.	0	3	1.06	1.083
PHQ 8	Moving or speaking so slowly that other people could have noticed. Or the opposite; being so fidgety or restless that you have been moving around a lot more than usual.	0	3	.59	.878
PHQ 9	Thoughts that you would be better off dead or of hurting yourself in some way.	0	3	.40	.798

Source: Janet B.W. Williams & Kurt Kroenke, J (1999)

TABLE 4

**IAT Scores and Level of Internet Addiction**

<i>IAT Score</i>	<i>Frequency</i>	<i>Percent</i>	<i>Level of Internet Addiction</i>
0 – 30	247	34.64 per cent	Normal level of internet usage
31 – 49	250	35.06 per cent	The presence of a mild level of internet addiction
50 – 79	209	29.31 per cent	The presence of a moderate level of internet addiction
80-100	07	0.99 per cent	A severe dependence upon the internet
Total	713		

TABLE 5

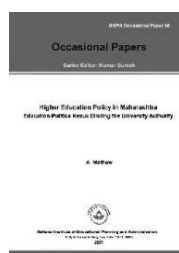
**PHQ-9 Scores and Proposed Treatment Actions**

<i>PHQ-9 Score</i>	<i>Depression Severity</i>	<i>Frequency</i>	<i>Percent</i>	<i>Proposed Treatment Actions</i>
0 – 4	None	186	26.10 per cent	None
5 – 9	Mild Depression	240	33.65 per cent	Watchful waiting; repeat PHQ-9 at follow-up.
10 - 14	Moderate Depression	179	25.11 per cent	Treatment plan, consider counseling, follow-up and/or pharmacotherapy.
15 – 19	Moderately Severe Depression	83	11.64 per cent	Immediate initiation of pharmacotherapy and / or psychotherapy.
20 – 27	Severe Depression	25	3.50 per cent	Immediate initiation of pharmacotherapy and, if severe impairment or poor response to therapy, expedited referral to a mental health specialist for psychotherapy and/or collaborative management.
	Total	713		

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## Educational Deprivation among Denotified Tribes: Problems and Prospects

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Malli Gandhi\*

### Context of the Study

Denotified tribes (DNTs) form a large group of population in Indian society. Due to several historical, economic, political and social reasons, the DNTs remained educationally, socially, politically and economically backward. According to the latest census, reports the total population of the DNTs in India is more than thirteen crores. They were treated as habitual offenders before independence by the British government. Even today, they are victims of mob lynching, arson and police atrocities. A majority of the DNTs are illiterate even after decades of independence. Education is a fundamental right in our Constitution as well as a universal human right. But this remains a dream for an overwhelming majority of India's DNTs. The DNTs have a very low status in our minutely stratified society. The fate of India's DNTs is that of dejection, lack of status, unfulfilled aspirations, ignorance and illiteracy. Though the DNTs constitute a major segment of India's population, there are marked inter-state and regional variations in terms of their population. They are spread over the entire country but are heavily concentrated in Gujarat, Orissa, Bihar, Madhya Pradesh, Maharashtra, Karnataka, Rajasthan, West Bengal, Tamil Nadu, UP, Andhra Pradesh and Punjab.

### Aims and Objectives

Education of children of the denotified tribes is a very important concern of our government. Although schools were provided for the DNTs, attendance was made compulsory for the children of the school going age, the expenses on education were met by the governments, children were also fed, but yet desirable results have not been achieved in terms of the standard of education. The educational problems concerning these DNT children should be tackled by the apex educational organisations as a part of their extension programmes. It is with this background that it was decided to analyse the educational deprivation among the DNTs with a view to improving the prevailing educational conditions

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and educational facilities available to the DNT children in the present day context. The main aims and objectives of the paper are to examine as to what extent education has reached among the DNTs in India, to analyse the prevailing situation of education among the denotified tribal communities in general and in Andhra Pradesh and Telangana states in particular, and to suggest the ways and means to improve the quality of education for the DNT children.

## Methodology of the Study

The paper is based on a study carried out during 2019-2020 in the states of Andhra Pradesh and Telangana (A Study on Educational Deprivation of Denotified Tribes Children in the States of Andhra Pradesh and Telangana). The study is based on the field survey conducted in some of the DNT schools prevailed in Andhra Pradesh and Telangana. The study is based on the interviews conducted in these schools with head teachers, teachers, community members, and personal observations made by the author. Reports of the various government committees and commissions, NT/DNT/SNT Commission reports, reports of the studies sponsored by the Indian Council of Social Science Research (ICSSR), and study reports of the Council for Social Development (CSD), Southern Region, have been consulted for the study.

## Conceptual Framework

The states of Andhra Pradesh and Telangana are the ones having the highest proportion of DNTs (59 communities, with 6 per cent of the total population). Apart from their increasing visibility in social life, the most significant contemporary fact is their growing political and cultural assertion. On the other hand, many among the DNTs experience social discrimination and stigma, particularly those located in the socio-economically backward regions. DNTs generally inhabit plains, mountainous and other isolated regions. They remained outside of Hindu civilisation for long. They were classified under different communities. Some of them are included in the list of scheduled tribes and others are in the list of scheduled castes. Still some others are in the list of backward classes. However, there are no complete census and survey statistics regarding their educational attainment, status and achievement levels so far in the country. Only rough population estimates on the basis of sample surveys and growth rates of population have been in place so far. DNTs are living in separate localities and outskirts of villages. These places are called settlements or *thandas*. So far there are no specific schemes for education and development by state or central government. Facilities like infrastructure, roads, electricity, drinking water, sanitation, school facilities and hostel provisions are not available to them in their dwelling places. For these people, the ensuing five-year plans visualise the construction of roads, providing them electricity and drinking water facility, and make provisions particularly for their education. Many of these communities have no permanent houses and schools.

## Debates on Educational Conditions and Status of DNTs

Despite the constitutional guarantees, earmarked budgetary provisions and policy initiatives over more than 70 years of independence, the most vulnerable sections of these people, such as DNTs, are still facing discrimination, deprivation and stigma of criminality. These sections are historically disadvantaged. They have been grouped in various categories such as the scheduled castes (SCs), scheduled tribes (STs), and other backward classes (OBCs). Yet there are several communities which are still not included in any of these categories. They are placed in general categories. These communities are deprived in all walks of life, including education. The National Advisory Council Working Group on Denotified Tribes (2011) debated on several legislative and policy initiatives for the DNTs. The working group recommended target based educational programmes and schemes for the benefit of DNTs. These communities need to be mainstreamed through education, ICDS, vocational skills and girl child education. It is important to interrogate the official view of nomadism as nascent criminality, as viewed by Meena Radhakrishna (2008), and suggest educational development of these communities is a priority and responsibility of the present governments. Temporary settlements, lack of housing facilities and lack of basic facilities are the primary impediments for educational deprivation (Aparna Rao and Casimir, 2003). The culture of nomadism, non-interaction with the mainstream communities, stigma and rampant discrimination (Kannabiran, 2016) are some of the serious problems faced by these groups of people, even in the field of education. These have been highlighted by some of the latest findings with regard to the educational deprivation of DNTs.

## Discussion on Educational Deprivation of DNTs

According to the 2001 census reports, there are 59 communities of denotified tribes in Andhra Pradesh and Telangana states. According to a survey by the Tribal Cultural Research and Training Institute, Hyderabad, Government of Andhra Pradesh (TCR&TI), there were 52 communities here. Of the total tribal population, 39 per cent belongs to the Sugali community spread mainly in Warangal, Nalgonda, Khammam, Mahboobnagar and Nizamabad districts. Around 9 per cent population, comprising Yanadi and Yerukula communities, are living in Chittoor, Prakasam, Guntur, Anantapur, Krishna, Kurnool and Nellore. Yanadis are mostly seen in Nellore district. Waddars are largely inhabiting in Kurnool and Anantapur districts (GoAP, 1964). As for the problems faced by DNT children in their education, these can be classified under five areas, viz economic, social, cultural, school facilities and administrative. The poverty of parents, lack of parental demand, child labour, and lack of early child care education (ECE), migration and the seasonal nature of their occupations are some of the factors which stand in the way of education of these children. Illiteracy of the parents, early marriage, community loyalties, lack of awareness and social stigma are some of the problems which retard the educational development of DNT children. There are a large number of school and administrative factors which hamper their educational development: lack of access, incomplete schools, teacher absenteeism, poor quality of teaching and unserviceable curriculum, unsuitable working hours, and so on. The education provided to the DNTs is plagued by many thematic and practical issues too: administrative structure, access, quality, participation, economic and education

development, attitudes, awareness, aspirations, teachers, innovative approaches, policies etc (Rani, 2009: 7).

Drawing on the data and experiences from fieldwork in the states of Andhra Pradesh and Telangana, one can fairly reflect on the issues related to education among DNTs in India. There is a large hiatus between the requirements of the DNTs and the modern education system, adding to the former's marginalisation. An attempt has been made here to examine why this is so. While education may be accessed with greater sedentarisation (implicit in the development strategies employed by the states), DNTs have a self-perception and way of life which make them less inclined to accept low wage employments. They are not simply passive bystanders to the development rhetoric, rather they involute and negotiate with powers that be and adopt a maximising strategy through the vote bank tactics. A few questions may be pondered over now: What is the contemporary educational status of denotified tribes? What kind of education should one envision for the children of DNTs? How should education be imparted to the children of DNTs? The government should think of an educational programme that bridges the gap between knowledge and livelihood, and provide them a comprehensive educational support system that has the potential of delivering them livelihood.

It is difficult for the DNTs to send their children to regular schools because their livelihood makes it necessary for them to keep moving. These groups include people who move from village to village in search of employment. They also move seasonally in search of paid work in towns and cities. Therefore, special mobile schools and residential schools should be opened for the children of these communities. DNT children must have an easy access to and equal opportunity for education. Recruitment of teachers to these schools may be undertaken by adhering to the standards of excellence on par with other schools. Facilities and infrastructures in DNT schools must be of the national standard. DNT children should be provided access to general schools so that they too can have social co-education. To encourage primary education among them, more residential hostel facilities should be provided (GoI, nd: 6).

The state's commitment to education of the denotified, nomadic and semi-nomadic children is contained in Article 15 (4), 45 and 46 of the Indian Constitution. Article 45 declares that the state would endeavour to provide free and compulsory education for all children until they complete the age of 14 years. Both central and state governments took up the responsibility of making special educational provisions for the purpose. The Backward Classes Enquiry Committee (1955) under Kaka Kalelkar had recommended certain measures for the upliftment of DNTs through education. However, no serious attempts had been made either by the state or the central governments to implement these measures. Excepting a few members among these sections, most of them still remain socially isolated. Many of the parents of children belonging to DNTs, those who have been to police stations and faced criminal charges, find it difficult to admit their children to normal schools as other communities find some pretext or the other to keep them out. As a consequence, most of the students, particularly girls, belonging to the DNTs are unable to pursue education at the primary level. It was felt that the scheme of education should be such that their children could get filled up with into vitality, energy and skills. During the first two five-year plans, the focus was on basic education, residential schools and provision of basic facilities in schools, especially in the remote and tribal areas, while also providing them scholarships and books. The scope of enabling interventions expanded considerably after the fourth plan.

In the first four five-year plans, efforts were made to set up schools, educational centres, Samskar Kendras, Balwadis and ashram schools. Scholarships were disbursed to the school going students. However, from the fifth five-year plan onwards, no specific education schemes have been initiated for their development (Singh, 2008: 62).

The studies carried out so far and the reports of various commissions and committees about the SC/STs do not report on the educational progress of the DNTs in the country and provide no specific data about them. However, we do see that the educational progress of DNTs has been quite slow and uneven. The only sources of data that are available in this regard are the old census reports (1901, 1911, 1931, 1941 and 1961) and a few reports of the committees and commissions on the SC/STs. The literacy level very low among the DNTs in India in general and in Andhra Pradesh and Telangana states in particular. In spite of a few public efforts for education of DNTs, still there is a long way to go. Field studies report that there is very poor attendance and enrolment of children of the age of 5-14 years in DNT settlement schools. Government schemes and programmes do not have any positive impact on the DNT schools. There is a high dropout rate among the children at the primary stage itself. The impact of poor attendance and high dropout rates is visible in low completion rates, in their enrolment and retention at the elementary school level itself. Marked educational disparities also exist within each category of DNTs. Enrolment ratios in schools in various settlements are very poor and attendance rates are very dismal. A proper census on aspects relating to school participation of DNT children in different states needs to be undertaken in order to determine their exact literacy rates, educational progress, attainment and challenges, educational problems, school attendance, dropout rates and percentage of enrolment.

Physically and socially isolated from the mainstream communities, the DNTs have lower enrolment and achievement rates and higher dropout rates than the general population, and even in comparison to the scheduled castes and tribes. A study conducted by the Regional Institute of Education, Mysore, in 2005, in the five selected DNT schools in Andhra Pradesh, reveals that there is a high percentage of absenteeism in Grades 1-5 among the DNT children who are enrolled in the schools. Very young children who are forced to help in routine household chores are less likely to attend school regularly. Migration, engaging children in work for money, non-residential teachers, the burden of sibling care, illiteracy of parents, daily wage work, contract work, child labour, psychological barriers and seasonal occupations are some of the specific factors posing problems for the tribal children in DNT settlements. The recent, region-specific studies on tribal schools paint a very discouraging picture about the lukewarm interest of policy-makers and chronic problems that plague the tribal ashram schools. Researchers are of the considered view that there has been no considerable change in the status of tribal education and development even after so many decades of planned development. Most of the problems that used to bother tribal communities across the country long ago still retain their bothering character. A field-based empirical research study from Karnataka (Rani, 2014) throws light on the crucial aspects that need immediate attention from the governments, policy-makers and administrators: inappropriately designed teaching learning methods, near absence of teaching in mother tongue, little attention to development of tribal languages, scant respect for the cultural specificities of tribal life, poor infrastructure, teachers living away from the campuses debunk the very concept of residential education. Other problems include lack of access, teacher absenteeism, problematic curriculum, difficult working hours, shortage of teachers,

dropout rates, scant respect for tribal culture and practices, insufficient infrastructural facilities, gender disparity, etc. Interestingly, the same problems mar the performance of Ashram schools, too, that were established with an eye on qualitative teaching and learning processes for tribal students. The findings of the present study are followed by some recommendations and suggestions made by the researcher. These are meant for various stakeholders dealing with Ashram schools, viz, administrators, teachers, parents, community and students. Some of the thought-provoking and substantial recommendations are: enhancing the autonomy of teachers and other employees working in Ashram schools; controlling graft at all possible levels; introduction of innovative pedagogic routines so that the cultural specificities of the tribal students are duly addressed; immediate start of improved teacher training activities; making the admissions into schools subject to local demand and available infrastructure; residence of wardens on the campus which needs to be a non-negotiable administrative routine; periodic conduct of cultural activities for children with emphasis on cultural practices; provision for solar or gas lights for students during night study hours where the schools are not yet electrified; better pay structure for part-time teachers as a matter of incentive and encouragement; promotion of adult literacy and night schooling activities for parents in tribal areas; nutritious and healthy diet for children to address malnourishment problem, etc.

Nomadic, semi-nomadic and denotified tribes are at the bottom of educational and developmental pyramid in India. This needs to be recognised. Owing to the increased pressure for survival, scarcity of land and the forces of globalisation and development, DNTs have been sidelined across various regions. This is aggravated by the fact that governments do not try to understand their needs in education, infrastructure and political representation. Most of the DNTs are labourers and go to different places in search of occupations. Child labour practices are more rampant in these communities. They continue to remain out of school. It is also important to note that there is a growing demand for education for DNT tribes (Yerukula, Sugali, Yanadi, Waddar, Dommara, Nakkala, Poosala, Shikari, etc). The situation regarding school attendance, school completion and dropout in primary and middle school levels is quite unsatisfactory. There is also unevenness in educational participation levels due to the reason that many of DNTs are not included in the list of scheduled tribes (Woddera, Dommara, Relli, Pamula, Boya etc (Gandhi, 2008: 257).

The children of DNTs differ in certain qualities from the students of plain and urban areas. Some of their important characteristics are:

- enjoy complete freedom and do not like restrictions,
- they are very bold,
- they are not very enterprising,
- they have poor leadership qualities,
- they are slow learners,
- they are mostly in a disadvantageous social position,
- they suffer from an inferiority complex,
- they are not talkative,
- they are fiercely independent,
- they are very disciplined,
- they are self-respectful,
- they are very plain-hearted,

- they often suffer from lack of proper opportunities,
- the modes of mainstream education and learning are not compatible with the requirements of tribal children,
- there is absence of vocational education,
- they have no opportunities to exhibit their talent,
- they suffer from lack of distributive justice, and
- they often learn through imitation rather than instruction.

DNT children are very clean, articulate, honest, amiable and good sportspersons. There is a psychological impact on children's minds when parents are taken by police and kept them in remand or jails. There is also a psychological impact on these children when general public and school teachers abuse them (sometimes) as they come from DNT families/settlements. Often DNT children face a number of problems in their surroundings, such as frequent quarrels, abuse, harassment by police and other people. Parents also use children for the preparation of illicit liquor. Children often accompany parents to distant places for their nefarious activities. They are well versed in the code language used by their parents. Generally, children are involved in petty trade and poultry work (Rani, 2009: 67).

## Findings

In general, each DNT settlement has a school. But these schools do not have hostels. Some of the DNT schools are managed by private missionaries (e.g., the Stuartpuram settlement school managed by the Salvation Army). This is meant to serve as an alternative to the otherwise inferior mobile schools. However, the general feeling among the DNTs is that residence in hostels implies their isolation from their tradition, society and knowledge. DNT children take the profession of their parents from the age of 8-10 years. This leads to child labour. Hostels and schools isolate children from other children in schools and succeed in creating a divide between DNT children and the children of other communities. Hostels and residential schools, though viewed as a good intervention by many, reportedly result in a three-step alienation of these children. They get distanced from native children as well as their own kin groups and way of life. Parents hesitate to send their children, particularly girls, to these schools and hostels which further reduce the chances of DNTs receiving education. In DNT settlements, hardly any women are educated. Most of the children in settlements lack proper motivation for study. The current scenario is that the DNT parents put their sons in hostels and hope that they would find secure government jobs. Girl children are married at an early stage and drop out of the schools. This is the paradox prevailing in the DNT villages (Gandhi & Lalitha, 2009: 78 - 79).

In the DNT settlements, there are no proper school buildings. The existing schools were constructed during the British period. These schools do not induce parents to send their wards to schools. In one single room, multiple classes are held. A few of them prefer to send children to the neighbouring places. Some of the DNT schools have single teachers. There is rampant teacher absenteeism. Schools lack basic infrastructural facilities. Teachers are transferred frequently and teaching is very poor in most of the schools. In many cases it is found that teachers are unqualified. No proper housing facilities exist for the teachers who stay in the DNT colonies. Non-tribal teachers have a negative feeling about DNT children.



Being mobile from anywhere for six months to a year, DNT children rarely get an opportunity to regularly attend a school. There are virtually no educational institutions that have developed a system to cater to the educational needs of children on the move (Gandhi, 2012a & b).

Provision of schools within easy access has been relatively poor for DNT children. Settlement schools are located in far-away places and in thick forests. Due to difficult geographical locations, children are unable to attend schools. Denotified tribal families usually live in separately segregated habitations. Their residential patterns had an impact on the physical and social access to schools. Schools in settlements have only up to the primary level. There is a need to upgrade those to secondary and higher secondary levels. DNTs have to send their children long distances or in some cases send them to other villages to pursue secondary and collegiate education. DNT schools located in various settlements in Andhra Pradesh and Telangana rank at the bottom in terms of quality, infrastructural facilities and human resources. Education levels of DNT communities are dismally low. According to some of the DNT communities, only 10 to 20 per cent of their community members are educated. Their dropout rate is very high due to the nature of their occupations. Poor education is a big hurdle for them in exploiting the new economic opportunities (Singh, 2019:110).

DNT children are not welcome in the municipal schools of their settlement areas. They are harassed and persecuted by children of higher castes in public schools while school authorities do not check the bullying of DNT children by the higher caste children. Teachers too are reported to harass and abuse DNT children, and are known for awarding harsh punishments for these children in schools. It has been reported that children were made to sit separately in classrooms as a result of which there is a widespread inclination in the community to keep children out of schools and train them in traditional skills to fend for themselves in future. Therefore, children living in settlement areas are encouraged to work on traditional occupations with their parents. It is also observed that teachers obstruct DNT children from mingling with the children of other communities. While the foregoing are the ground realities in various places across the country, teachers often complain --- without attending to their educational needs --- that DNT children are slow learners (Radhskrishna, 2008: 7).

The incentives earmarked for DNT schools are not properly distributed in schools. Children studying in these schools are not in receipt of their scholarships, uniforms, textbooks, notebooks, school grants, mid-day meals and other incentives on time. Even if schools receive incentives, DNT children are not able to get them from school authorities. In the DNT schools, scholarships and stipends are provided by state governments to support them so that they could continue and complete their education. However, there is a great delay in dispatching the scholarships. The government scholarships scarcely reach DNT children studying in the remote schools (EPW, 2008: 6).

It has been recognised that education at the primary level is more effective when imparted in the mother tongue --- either by community members or by bilingual teachers. While this has been integrated in the educational structure of DNT communities, the quality of education and teacher motivation are so poor that most of the children do not even qualify for admission to the primary or secondary schools. Though governments have prepared bilingual textbooks, posters, dictionaries, glossaries, kits, materials and bridge inventories in tribal languages, they are hardly of any use for teachers working in tribal schools. There is an urgent need for training of teachers who are working in DNT schools so as to encourage

the children to speak their mother tongue. Teachers are expected to learn the children's language for effective communication in classrooms. The constitutional provision of Article 350A recognised the importance of minority languages. Children must be educated in their home language at the primary level. Loss of a language means loss of a certain way of knowing the surrounding world. Experiences of the schooling of DNT children in Andhra Pradesh and Telangana have revealed the displacement of Yerukulas, Yanadis, Sugalis, Boyas, Waddars, Dasaris and other DNT tribes. Local governments should take active measures to introduce instruction in mother tongue (Banjara, Yerukula, Yanadi, Boya etc) at primary level in all DNT settlement schools. Articles 29(1) and 350 A of the Constitution of India refer to the inclusion of Yerukula and Banjara tribal Languages in the Eighth Schedule of the Constitution. Similarly, other DNT languages also need to be considered. (see the note at the end of the present paper.) The need of revamping the curricula so as to address the language barriers of tribal students, as experimented in case of primers in tribal languages, has been highlighted by the National Education Policy 2020. The policy has emphasised the importance of mother tongue/ local language/ regional language as the medium of Instruction at least till the primary grade. Tribal communities and children from scheduled tribes often face several disadvantages at multiple levels due to various historical, geographical and cultural factors. As a result, children from these communities often find their school education irrelevant and foreign to their lives --- both culturally and academically. There is a need for several interventions to uplift the children from tribal communities. These children should receive the benefit of government initiated interventions.

DNT children are imaginative participants in the process of defining their space, having the capacity to inhabit their own conceptual world whilst mediating and participating in activities. DNTs have rich folklore and art traditions in their society. They take a central position in performing them in their villages regularly. Storytelling, dance, puppetry, folk songs, music, community gathering and other activities in their society seem to contribute a lot for their children's fertile imagination and effective learning. While taking into consideration of their culture specific curriculum, one needs to ascertain the impact of restricted movements of many of the DNT communities on their education and on their physical and cultural wellbeing. This can certainly have a positive impact on their culture, creation and transmission. It suggests a particular way of learning that is sensitive to the life conditions and situations in their colonies or villages. Integration of games, sports, music and cultural activities should be introduced in schools and school curriculum of DNT children. Virtually no value is attached to the sophisticated skills, knowledge systems and complex institutional structures which these DNTs possess. There is also a virtual absence of focus in research on the nature of association between formal education and their traditional knowledge (Dubnick, nd).

The depth of knowledge which the DNTs possess of their regions, forests, flora, fauna and about the world of the surrounding areas and thick forests is unmatched. But so far they have not been able to explore it. Parents and children of DNT communities have abundance of knowledge about the locally available resources, herbs, medicinal plants, etc. Children show acrobatic skills and perform their exceptional art in towns, markets, bazaars by performing feats. Among the children of DNT communities, there are admirable sport persons, musicians, painters and dancers with variety of skills at their command (The Hindu, 2008: 8).

Harmonious relationship between school, home and community plays an very important role in improving educational levels among the DNT communities. Home atmosphere forms an important variable influencing child's educational achievement. A child needs encouragement and assistance from family members for coping with the demands emanating from schooling process. Community support, on the other hand, goes a long way in helping teachers to perform their duties. Community involvement is essential for enrolling children and taking interest in the functioning of school. Teachers will be more alert and focused in performing their job when community involvement is active and vibrant. Teacher Parent associations and Village Education Committees (VECs) are the bodies that are expected to bridge the gaps between school, parents and village. Effective functioning of these linkages or further activating these linkages is required at this juncture. It becomes crucial in view of the unique problems faced by denotified communities (Gandhi, 2005: 89).

Among the denotified communities, family life is frequently interrupted because of the culture of crime. Though very few families are indulging in criminal activities, stigma is attached to the whole community and the branding of the community is still haunting the denotified communities. Due to the perceived lack of opportunities, parents do not have enthusiasm about enrolling their children in schools. Generally, the educated ones from the denotified communities are discriminated in employment. Because of their economic compulsions, parents regularly depend upon their children to get assistance from them, sometimes even in illegal activities. The attraction of making quick money lures the parents to commit a crime. Male members in some families are often on the move, both for legitimate and criminal activities. Police harassment of parents affects the psyche of children as well. Children who come to schools in a disturbed state of mind, cannot concentrate on studies. On the whole, childhood in denotified communities is not a cherished experience. Children coming from families without proper environment lack an interest in studies. The best possible solution advised by many under these circumstances is to remove the children from home atmosphere, by shifting them to residential institutions. The same was strongly recommended by many colonial missionary activists while working for educational improvement of DNT children during late 19th and early 20th centuries in India. Efforts were made to reform these communities by missionaries and social reformers. But social reforms alone cannot solve the problem without sustainable economic rehabilitation. DNT communities are generally divided. Those who are well off are trying to get better education for their children in private schools. Others are indifferent. On the other hand, by and large, villagers hardly take interest in local school affairs (Lalitha, 1995: 178 – 179).

## Conclusion

The name 'settlements' is a misnomer and, therefore, there is a need to refer them by using the names of modern villages rather than using terms like settlements. Thirty years ago, villagers of the denotified communities wished to have protection from the clutches of police and public. They were harassed, humiliated and belted by the police. It was a vicious circle for them. Today, in DNT colonies, English medium schools are preferred. It proves the fact that there has taken place a lot of difference in their life during the last thirty years. Children of the denotified communities cannot be compared with general students. However, even though DNT settlements have become like free colonies, they are not yet free from stigma. Still the public use the word 'settlement' while referring to these colonies.

The Tribal Welfare Department is advised to rename these colonies as soon as possible (Lalitha, 1995: 180).

Pertaining to the language of DNTs, children are familiar with the code language used by parents. If the medium of instruction in schools is the same, it will be more advantageous for students to converse in the same language with teachers. Home language will reduce the gap between teachers and children. Parents and village elders are expected to attend village committee meetings regularly. Then there is scope for them to find out the causes for dropout of their children. Parents and children should realise that education will pave way for their future. Village elders should persuade the local revenue officers and other educational functionaries to attend some of these meetings. Involvement of the community and parental participation are very essential. Child marriages are taking place in settlement areas. If the village elders understand the problem, then there will be scope for curbing these prevailing social evils along with rectifying problems in learning institutions (Gandhi, 2005: 127 – 128).

Another important factor is that parents are not always or easily accessible to children. Children have their demands and their own emotions. When father is absent, it is very difficult for a child to adjust and go to school regularly. Father's absence and ill treatment of the police affect the minds of children. The atmosphere prevailing in school is quite different from that at home. The general atmosphere with regard to education in all settlements is almost same. Efforts need to be initiated so as to establish direct linkages between learning and earning. Employment in labour-intensive industrial establishments should be created for them. An act like this might give them immense satisfaction and confidence, and will make parents realise the importance of education for their children. If parents are benefited financially, they will not force their children to go to work for a pittance. If teachers are able to educate the denotified communities, then automatically children will understand the importance of eradicating child marriages. To improve the education of DNT children, the learning atmosphere in all the settlements should undergo a complete metamorphosis. The public, the community, the parents, the teachers and the government should work as a team to improve the existing situation. Psychological and sociological factors affecting the DNT communities should be understood by one and all. Otherwise, the development of DNTs will remain as it is even after six decades of independence (Ananthakrishnan, 2005).

Even after 65 years of independence, rural masses in India, particularly the DNT communities, remain deprived with regard to primary and secondary education. These communities are caught in the cobweb of development and transformation. Their villages are transformed into slums and continued to remain as under privileged (D'Souza, 2001: 70 – 71). The quality of education in their schools and colleges is substandard. The educational facilities provided to them are very poor. Succinctly, the conditions can be characterised by dirt, sickness and unemployment (Sujatha, 1987). Some of the inmates of ex-settlements in Andhra Pradesh quipped: *We have heard that education brings development. But our children do not learn anything in schools. We are not in a position to cope with ground realities and education finally has no meaning for us and our children in terms of immediate succour. Education given in schools has no connection with our day to day life. Education does not bring development in our life* (from our interviews with Yerukula persons in Stuartpuram, Sitanagaram and Lingala ex-settlements in Andhra Pradesh, 22 November 2005).

So far, from the 1950s onward, the *Government of India* has appointed several committees and commissions to suggest measures for the development of the DNTs. These included those headed by Dr K B Antrolikar, Kaka Kalelkar, Ananthasayanam Ayyangar, B P Mandal, Renake, Rohini, and Idate. These committees and commissions recommended special educational facilities for the education of these sections of people. They all said the facilities provided to the children of SCs/STs and OBCs should be extended to the DNT children too. But the implementation of their recommendations was very not satisfactory. Most of the recommendations were outright ignored by the successive governments. There is an imperative need that at least the present government should implement the recommendations suggested by various commissions in order to improve the educational facilities in DNT colonies (Antrolikar, 1951). One has to see that, within the next ten years, educational standards of DNT children are brought on par with others --- by implementing the measures recommended by various committees and commissions. Primary schools, secondary schools and ashram residential schools should be provided in their localities; these should also include vocational training centres. Right to education of DNT children should not remain a dream for these children (Bokil, 2002: 148). An important mission statement of one of the premier educational wings of the Government of India, the NCERT, is to reach the unreached in fulfilling the educational needs of DNT children in the country. It is hoped that there will soon be the break of first light now.

## Notes

There are several DNT communities in India that are broken up and spread over long distances but have survived as communities because they are bound together through the tradition of their oral language. The wealth and variety of their languages are enormous. However, it is sad but true that their languages and their literary works are neglected. Their languages, songs and stories are heard from itinerant street singers which are not being used by members of these communities now. See Devy, G N (2006: 6).

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## Book Reviews

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ENGLISH, Fenwick W. and BOLTON, Cheryl L. (Eds.) (2016): *Bourdieu for Educators: Policy and Practice*, New Delhi: Sage Publications, ISBN-978-1-4129-9659-4 (Paperback), pages: 126, Price: \$ 33.00

Education in itself is an expression of symbolic power, and one can acquire and translate this symbolic power into economic and social capital. But when the acquisition and accessibility of these symbolic cultural capitals is limited to only certain meritorious students who are coming from the dominant sections of the society, then this leads to maintenance and reproduction of social inequalities. This denotes that differences are legitimately institutionalised where attempts to establish so called 'democratic policies' into purely meritocratic institutions somehow fail to serve the actual purpose of reaching all. The book under review particularly revolves around the issue of social justice and tries to provide alternative solutions to the social problems, i.e., social inequalities, equal representation, opportunities and accessibilities, social exclusion, etc. It addresses these social issues in the policy making as well as implementation perspectives in which authors tend to oppose the neoliberal or neoconservative framework of policy making.

This book specifically introduces Bourdieu's ideas, principles, and insights in great details to the larger audiences. It provides a scope to understand policies and its various practices through Pierre Bourdieu's (1930-2002) sociological framework and discusses the implications of public policies that are guided by dominant privileged ideologies. Throughout the book, the authors critically reflect upon the relevance and significance of Bourdieu's writings in the present contemporary educational contexts. The book challenges the policy makers and practitioners to revisit critically the neoliberal framework of policy making.

Bourdieu was not only a French philosopher but was a great sociologist, social activist, educationist and revolutionary researcher. Fenwick W English and Cheryl L Bolton have conceptualised Bourdieu and framed the entire educational discourse with respect to *elementary, secondary* and to some extent *higher education system*. They explain Bourdieu's theoretical formulations and scientifically use his special vocabularies to convey special meanings.

The book did not merely explain the concepts in their abstractness. Through *empirically conducted researches*, the authors have conceptualised the ideas and made this book more reader friendly. It presents the Bourdieu's ideas entirely in a linear, unidirectional manner but represents his ideas in their *interrelatedness*.

Within the broader reference of Bourdieu's ideas, the authors oppose the prevalence of neoliberal forces in the United Kingdom, United States, Canada and Australia. This book provides the reader sufficient space to reflect and question the further implications of a



market driven economic system. The capitalist class is not only influencing the social sectors like health; it is influencing the education sector perhaps to a larger extent.

According to the authors, Bourdieu, like Marx, dwells on different forms of symbolic capital, i.e., *social, economic and cultural capitals*. Though he recognised the importance of all the three forms of capital, he gave utmost importance to economic capital. He justifies the statement with an idea that 'economic capital' is influential in its character. It opens the doors for other forms of capitals. Thus Bourdieu justifies Marx's idea of determinism where the economy has an overriding effect on other domains. Privatisation and deprofessionalisation of education are the results of this market driven economy. There are dominant powerful elites who politically or selectively segregate different types of schools, which further leads to unequal distribution of different forms of capitals. Schools and colleges possess different symbolic values and prestige. The selection or even entry to the particular schools or colleges is not purely based on our socio-cultural choices; instead it is our paying capacity which determines our choices/preferences. Our choice for selection of a school is not random; rather a subjective interpretation of our economic positioning in the ladder of socio-economic hierarchies.

The emerging neoliberal or neoconservative forces clearly demarcate the segregated access and differentiated opportunities on the basis of one's purchasing power. Our paying capacity determines our purchasing power and this further determines our educational choices. The unequal distribution of capitals through different types of schools are not only widening social inequalities but also maintaining the legitimacy of social hierarchies. In this manner, neoliberal forces are not only widening social inequalities but also adding to the capabilities of only those who already are in a privileged position.

With the emergence of marketisation and privatisation of education, it has become a commodity where institutionalisation of knowledge, its production, distribution and even consumption is politically contested. With the commercialisation of education, market has been seen as a 'service provider' where global market provides services on the basis of their consumers' needs. This is how schools are now running as profit making ventures. Education is seen as a means as well as an end to achieve economic advancement.

The authors, in the very first chapter, discuss the nature and character of the so-called educational reforms and come to the point with reference to Bourdieu's concept of 'illusio' and 'misrecognition.' Reforms are selectively chosen, dominant ideologies of the elite to preserve their interests. In their Bourdieuan framework, the author have highlighted how we tend to misrecognise that '*Reforms are for all and benefit all.*' Instead, these are systematically designed and represented in a systemised manner which selectively benefits the dominant powerful elite groups. Also, this misrecognition is a collective misrecognition which aims to preserve the status quo further.

The book tries to bring to the fore the true picture of the so-called reforms and conclude that reforms are basically nothing but the implementation of the scientifically legitimised forms of domination by dominant elites in social spaces. The larger motive in the name of educational reforms is to maintain the status quo and strengthen the social inequalities. Thus, state policies are nothing but a scientific, legitimate way to maintain the culture of silence and discourage opposition. The interests of the dominant elites are not only preserved by law and reforms but also sanctioned by education, religious institutions and media. Through the United States' policy recommendations of 'No Child Left Behind,' in

Chapter 2, the authors have highlighted how children were at the very first segregated on the basis of economic disparities and later on according to their racial identities.

The authors highlight the fact with reference to Bourdieu's conceptual understanding that our contemporary educational institutes are suffering from the problem of meritocracy where process of admissions and appointments are favouring those who achieve higher merits. Here comes an important question about who after all achieve higher merits. Can we all achieve higher merits? If not, why? The authors argue that if only the meritorious can gain entry into higher institutes or jobs, where all the others will go. Who all are being prevented from entering and why?

The book argues that education cannot be considered a neutral agency which only imparts knowledge and skills. Rather it is a politically controlled agency which functions in line with the already existing power equations. In Chapter 5, again, the authors similarly highlight that education has become the site of politics and site of contestation where dominant and powerful elites contest for supremacy and legitimacy for their socio-cultural representations in the curriculum. Supremacy and legitimacy are the function of those who possess greater forms of capitals. School is considered a secular, democratic social space or a site of social discussion. But in practice it rejects any discussion over cultural differences and cultural conflicts which children from non-dominant groups particularly face in the classrooms. What is to be taught in the school premises depends on the subjective interpretations of those who powerfully regulate the states in various ways.

One of the ways of power assertion is evidenced in the form of curriculum. Curriculum is considered as a 'culturally loaded human construct.' The authors maintain in Chapter 3 that curriculum planning for school children is a politically contested process where there is a political struggle to maintain, reinforce and establish the selective curriculum in favour the dominant group over the others. Moreover, this lack of cultural representation of minority groups in the curriculum further widens the achievement gaps. It is a misrecognition that curricula are systematically and scientifically arranged cultural symbols. The authors put forward the idea that neither curriculum planning nor its implementation is purely a scientifically organised objective articulation for the wellbeing of the societies. Rather these are subjective interpretations with subjective meanings. Curriculum, as a symbolic capital, maintains the social structure and inherent social hierarchies. Through an ethnographic study of Gypsy community in England (2009-2010), the authors have revealed that through contested and subjective curriculum the politics of exclusion, domination and cultural representations are entering into the classrooms. There is politics of exclusion which cannot be ignored, i.e., who selects what for whom is an important question which the authors asked for the readers to reflect upon. The culture of misrecognition is not only ingrained but also reinforced through the process of socialisation among children where their voices and representations are deliberately excluded and this process of exclusion is not only naturalised but also systemised in our school education systems. These processes of exclusion in the education systems not only reproduce social hierarchies but also legitimise it. The authors have even gone to the extent of saying that the achievement gaps are not happening because of one's inability or lack of potentialities to learn; rather it is a result of systematic exclusion of their representation in the curriculum. Following the same line of argument, the authors say in Chapter 4 that children are trained in such a manner that they can generally differentiate between what is an acceptable versus what is a non-acceptable

behaviour but, yet, to a larger extent they fail to acknowledge the reasons why certain behaviours, like questioning the authorities, are considered as inappropriate behaviour and even their attempt in any forms to raise such questions are discouraged or suppressed through the means of various sorts of punishment. Bourdieu continuously opposed this culture of oppression and, instead, favoured the culture of questioning.

It has been concluded here that the education sector of any country must be free from politics. The authors argue that our education system suffers from the sickness of 'the best' epitome --- that the same curriculum is *the* best for all. Curriculum planners appreciate 'the sameness' and ignore the diversities. What has been questioned here is: How can a curriculum with monocultural characteristics be universally applied? Our democratic education system fails about it at the moment; it favours the interests of one over others. On the whole, this book continuously advocates Bourdieu's ideas of social justice and opposes the emerging forces and trends of neoliberalism with respect to policy planning and its implementations.

Even though this book was published a few years ago, it holds its relevance for policymakers, policy implementers, educationists, educational reformers, curriculum makers and textbook designers at a time the New Education Policy 2020 is in place for implementation. The NEP 2020 not only envisions the idea of quality education but envisages 'quality education' with 'equitable and inclusive education and promote lifelong learning opportunities to all learners.' On a similar note, it advances a global perspective and provides the readers the vision to maximise the learning opportunities so as to cater to the needs of the most disadvantaged and deprived sections of our society in our Indian education system.

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