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BOOK REVIEWS

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Challenges before Higher Education in Developing Societies*

Prabhat Patnaik*

The twentieth century witnessed some momentous developments. Countries which for decades, or even centuries, had remained colonies, semi-colonies, or dependencies, acquired political independence after prolonged freedom struggles. With decolonization they also emerged into modern nationhoods, where diverse people with dissimilar languages, ethnicities and regional identities who had become unified in the course of the anti-colonial struggles, decided to live together as a unified nation under a single nation-state. The political form given to this nation-state was typically that of an electoral democracy based on universal adult franchise, usually a parliamentary democracy but occasionally an elected Presidency. There were no doubt severe birth pangs for this emerging new order. There were many false starts, partitions, and secessionist movements, but, through all these, the awakening of the hitherto marginalized people of the colonial and semi-colonial world to nationhood, political rights and democratic persuasions, remains an outstanding fact.

The momentousness of these developments must not be underestimated. In India for example, people characterized for millennia by a caste-system that hierarchically ordered them into superior and inferior strata, the institutionalization of "one-person-one vote" constituted a veritable social revolution. It has been made possible because the elite that led the freedom struggle had put this forward as a condition for mobilizing the people behind the struggle, as a promised implicit social contract to be given explicit form later in the new Constitution of the Republic. And this elite in turn was the legatee of an intellectual upsurge which the modern higher educational system, instituted by colonialism with the objective of recruiting functionaries for the colonial regime, facilitated *despite itself.*

This process of awakening, sometimes referred to in somewhat inelegant language as "nation-building", is far from over; on the contrary it faces severe challenges on an almost daily basis. And if it is to be carried forward, then the higher education system, now an integral part of the new nation, must continue to produce people who remain

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sufficiently imbued with the values enshrined in the Constitution, and are sufficiently committed to the implicit social contract of which the Constitution is the outcome. These are the values of secularism, egalitarianism, opposition to caste and gender discrimination, support for democratic arrangements, for civil liberties and for political rights. *In short, the higher education system in countries like ours must be oriented towards carrying forward the task of "nation-building". This must remain its highest priority.*

Two misunderstandings may arise here. The first misunderstanding consists in the belief that higher education has to do with the striving for knowledge and knowledge has nothing to do with nationhood. By emphasizing the "nation-building" task of higher education, are we not distorting its role, detaching it from the academic universe where ideas alone matter, and loading onto it "political tasks" such as "nation-building"? Are we not looking upon higher education in somewhat narrow terms as a purely functional activity? The scope for this misunderstanding arises because of the crudity of the term "nation building" which carries with it a suggestion of functionality, artificiality, narrowness and imposition. What is meant by the "nation building" task of higher education, however, (I have elsewhere called it, following Antonio Gramsci, the task of creating "organic intellectuals" of the people) is something very different from these suggestions. It is indeed a striving for knowledge, for excellence, but unrestricted by the hegemony of the existing ideas which typically emanate from the advanced countries. These ideas must of course be engaged with, but higher education in developing societies cannot remain a mere clone of what exists in the advanced countries. Developing societies must go beyond the mere imitation of research agendas set by the established centres of learning in the advanced countries, in order to take account of the people's needs. I mentioned earlier that modern India was the outcome of an intellectual upsurge, of a period of great intensity of intellectual effort, be it in the form of Dadabhai Naoroji's "Drain Theory" that exposed the inner working of the colonial system of exploitation, or the Gandhi-Tagore correspondence that touched upon practically every problem of modern India, or the forays into theoretical Physics of a Meghnad Saha or a Satyen Bose that produced frontier research enshrined for instance in the Bose-Einstein Stastic. To create conditions for the sustenance of such an upsurge is what constitutes the "nation-building" task of higher education; it visualizes much higher leyels of creativity than otherwise.

The second misunderstanding is to believe that even if the "nation-building" task of higher education is important, it is a matter that is best left to certain disciplines and certain segments of higher education. How can it have any relevance for the training and research in large number of disciplines? In other words it cannot be of concern for the entire higher educational sector as a whole. The mistake here consists in not recognizing that the overall task of higher education impacts every aspect of it. (The description of the task of higher education in Gramscian terms as producing "organic intellectuals" of the people in developing societies reduces the scope for such misunderstanding). The very conception of the system of higher education in all its facets is shaped by this task, which

covers not just the inculcation of certain specific values, such as secularism or respect for civil liberties, but the creation of an entire ***Weltanschauung.***

A higher education system geared to this task will necessarily have certain characteristics. First of all it must be largely state-funded. There has always been space for charities, philanthropic initiatives, bequests and such like for starting institutions for higher education; they can easily get dovetailed into any state-funded system to serve the overarching task of "nation-building" in the broader sense, but the same cannot be said of private educational institutions run on commercial lines which necessarily have to treat education as a saleable commodity. Treating higher education as a commodity necessarily comes in the way of its nation-building task. For instance, it precludes affirmative action in matters of admission and recruitment which is important for an egalitarian educational system; and it also precludes emphasis on courses and disciplines that are important from the social point of view as distinct from being merely profitable.

Many private educational institutions claim that they do not run for profit, even when they are palpably profit-oriented. This is on the grounds that all the profits they earn are reinvested into the institution itself. This claim, however, is misplaced. The logic of the operation of an educational institution depends upon the objective for which it is run. If obtaining a large surplus is the objective of the institution, then, ***no matter how this surplus is deployed,*** the logic of the operation of the institution will be vitiated in a manner inimical to the "nation-building" task of the higher education system.

Secondly, as already mentioned, a higher education system oriented towards nation-building must not only be open to all but also make itself inclusive in a deliberate sense by drawing students and teachers from hitherto excluded and marginalized communities through affirmative action, of which the simplest and the most effective form is reservations. It is usually believed that affirmative action, though necessary for ensuring equity, militates against excellence, that we have here a conflict between achieving equity and ensuring quality. This perception is fundamentally wrong. Affirmative action which achieves equity, simultaneously enhances the quality of the higher education system. Not only is there no conflict between the achievement of equity and the enhancement of quality, but the former is the most effective and potent means of achieving the latter.

This follows simply from the premise, acceptable to all but the most die-hard racists, that talent and academic ability are more or less evenly distributed across the various social groups in a society. It follows then that if among the students or teachers of the higher education system there is overwhelming representation of only a few social groups, to the exclusion of others, then that system must be suffering from a loss of quality. The best quality education system would thus be the one where the group-wise composition of students and teachers, i.e. of the academic community, would closely approximate the group-wise composition of the population as a whole.

Of course, because of past discrimination, the excluded groups in any initial situation are so handicapped that their actual performance invariably falls short of what they are capable of, i.e. of their potential, so that in what appears to be a "fair" selection, they continue to remain excluded. This only shows that establishing ***formal equality*** at the

level of selection only serves to reinforce and perpetuate *substantive inequality.* Or putting it differently, the apparent insistence on "quality" in a given situation serves to undermine quality in the long run. *The only way to overcome this situation and bring about long-run quality improvement in the higher education system is through affirmative action that appears immediately to be compromising on quality.* The argument here is exactly analogous to Friedrich List's argument for the introduction of protection, as opposed to free trade, in newly developing economies for the longer run efficiency of production in the world economy.

Putting it differently, underlying apparent equality of opportunity in a system marked by a legacy of exclusion there are major and structural barriers to entry for several social groups. *Real equality,* and hence the achievement of real quality, can be ensured only by violating *formal equality,* through affirmative action, including reservation. True, this has to be followed by active steps to ensure that those who have entered the system because of being helped across the barriers to entry are given the opportunity to achieve their true potential. But that is an argument for supplementing reservations by a host of other measures, not for doing away with reservations altogether.

Thirdly, a higher education system oriented towards "nation-building" must always preserve dissent and democracy within the educational institutions so that a multiplicity of points of view, including many that are unpalatable to the ruling political echelons, can flourish. The institutions must work out norms of conduct and modes of expression of dissent that ensure that debate thrives without being snuffed out and that the right to free expression of all sections of the community in an academic institution is respected. Snuffing out dissent in the name of creating an atmosphere of work and promoting "excellence" by institutionalizing an authoritarian structure within the higher education system is fundamentally opposed to the "nation-building" task of higher education. Since the anti-colonial struggle itself began with the expression of dissent within the institutions of higher learning, for which the dissenters were punished during the colonial period, to snuff out dissent now on the argument that the present situation is altogether different, amounts to making the untenable claim that we have now stepped out of history, i.e. that the task of nation-building no longer exists, that it belonged only to the past but does not concern the present.

It follows then that the "nation-building" task of the higher education system precludes altogether the privatization, commoditization, commercialization and corporatization of the education system. An education system that is largely private and run for profit, even though the profit motive may be camouflaged by reinvestment policy, will be necessarily non-inclusive, not just in the sense of preventing or diluting affirmative action, but also in the sense of keeping out students from impecunious families. It would entail an emphasis on marketable courses rather than on courses in basic sciences, social sciences and humanities. It would stifle dissent and the free atmosphere of debate for the sake of maintenance of "discipline" and improvement of examination performance, thereby curtailing freedom of the mind; and it would

substitute "learning by rote" and conventional "good student" qualities for the intensity of intellectual engagement which is a necessary condition for excellence.

But this is precisely where the higher education system encounters its first challenge. The participation of the economy in the global market in the contemporary period creates conditions that promote exactly these very tendencies of privatization, commoditization, commercialization and corporatization.

II

Participation in the global market implies that only certain kinds of products, embodying only certain kinds of knowledge and skills, are demanded. There is a pressure, therefore, on the higher education system for specializing only in such skills and knowledge. And if the publicly-funded education system resists doing so, then a parallel private system comes up, whether legally or illegally, that takes upon itself the task of catering to the market. The entire thrust of the education system, therefore, shifts towards producing students who can meet the demands of the global market. Since participation in the global market is far more lucrative from the point of view of the students, there is additional social pressure from the middle class, from which the students overwhelmingly come, to orient the higher education system towards the pull of the global market (and of the market in general).

The attempt to resist this pull of the market in the era of "neo-liberai" policies, for the sake of preserving the "nation-building" role of higher education, is undermined by the two factors just mentioned: one is the pressure of the burgeoning middle class which is afraid that lucrative employment opportunities for its children in the global economy may go unused; the other is the fact that any reluctance on the part of the state to resist the pull of the market on the education system results in the mushrooming of private educational institutions that come up to fill the gap. As a result, willy-nilly, privatization, commoditization, commercialization and, together with it, corporatization enter the higher education system in a big way. And soon the demand arises that the government should remove whatever residual hurdles it may still have in place against this process.

This also affects the publicly funded higher education system itself which now has to compete against the private system that comes up in response to the pull of the market. The public higher education system is caught in a series of dilemmas. If it does not prioritize marketable courses but remains committed to its emphasis on the basic courses which are less marketable, then it runs the risk of attracting only the less talented students who are less employable and hence more demoralized. That is, it runs the risk of becoming an academic backwater. On the other hand, if it does orient itself to the dictates of the market, then it merely imitates the private system and loses its *raison d etre.* Even in courses which it has been running and which have suddenly become marketable, yielding extraordinarily high salaries to their products, if it continues to charge low fees, then it is giving an unwarranted subsidy to the middle class students with lucrative employment prospects. On the other hand, if it raises its fees then it is compromising on inclusiveness. The public system in other words is increasingly faced with an unpleasant

choice: either it imitates the private system and thereby loses its *sui generis* character, and hence its "nation-building" role; or it resists the tendency for such imitation, remains committed to its "nation-building" role in the face of the pull of the market and becomes an academic backwater, catering to a bunch of mediocre, unemployable and demoralized students. Either way the public higher education system faces a crisis. And since the private higher education institutions have little interest in or concern for imparting any education that carries the "nation-building" project forward, it follows that *the phenomenon of globalization, and the pursuit of "neo-liberal" policies as an integral part of it, tends to undermine the "nation-building" task of higher education.*

Developing societies like India, therefore, appear to be caught in a serious contradiction in the realm of higher education. Their avowed objective in this realm of "nation-building", appears unsustainable in the face of the current globalization. If they retain the paradigm of the higher education system inherited from the anti-colonial struggle, and adhere to emphasizing the "nation-building" task of higher education, then they get overtaken by the parallel development of a private education system that has scant regard for "nation-building". On the other hand if they abandon the paradigm and deliberately make the higher education system market-oriented, then the "nation-building" task is given the go-by anyway.

One way or the other, their avowed objective of "nation-building" appears unsustainable in the current milieu. This would not matter much if they could afford to ignore the "nation-building" task, if they could simply swim with the globalization tide and move towards the commoditization and commercialization of higher education. But precisely because the "nation-building" task retains its primary relevance, it indeed becomes even more urgent because of the social strains that globalization brings in its wake. They can ignore this task only at their own peril. How to preserve the primacy of the "nation-building" role of higher education in the context of the current globalization is the biggest challenge before the higher education system in developing societies like India.

On closer examination, however, it becomes clear that this contradiction facing the higher education system is not internal to it, but a consequence of developments extraneous to it. There is no reason for abandoning the "nation-building" role of higher education in societies like ours even in this era of globalization *provided a whole range of supportive policies are undertaken.* Since these supportive policies are desirable in themselves, there should be no qualms about undertaking them. For a start, the perception that, unless the higher education system adjusts its structure to the demand of the global market, its products will forfeit job opportunities, is more likely to be a reflection of the insecurity of middle class parents than a reality. India's recent success in exporting a range of "knowledge-based" services is the outcome not of any change in the higher education system that has occurred in more recent times but of the old higher education system that was erected in the Nehruvian period. True, there has been a mushrooming of private "self-financing" institutions (which are surreptitiously engaged in profit-making despite a Supreme Court directive proscribing profit-making in higher educational

institutions), but the cream of "knowledge-practitioners" in India today, engaged in this entire range of activities, still consists of students drawn from institutions set up in the period when India was pursuing not a neo-liberal strategy but a *dirigent* one. In fact the mushrooming of self-financing institutions arises not because of the *structure or the quality* of the public institutions of higher education but because of the shortage of such institutions. What is needed therefore, is not a change in the nature or orientation of public institutions of higher education but an enormous expansion in their numbers.

This expansion need not be confined only to those disciplines and areas where there is a large palpable market demand, for that would discriminate against basic sciences, social sciences and humanities. It has to encompass a whole range of disciplines and areas, especially basic sciences, social sciences and humanities, for which even though no significant market demand may exist, *a social demand needs to be promoted.* Promoting these less marketable areas is necessary both for preserving the broad-based nature of the higher education system and for developing the intensity of intellectual engagement in society.

Of course, the expansion of the public higher education system in this manner may still leave an excess demand in the market for students coming out of the more marketable disciplines. As such that the mushrooming of private "self-financing" institutions catering to this excess demand may still not be eliminated. But a distinction needs to be made here between "education" on the one hand and the "imparting of skills" on the other. The significance of this distinction, which after all is drawn all the time in practical life, lies in the fact that while "education", including technical education like engineering and medicine, must be the preserve of the state, supplemented by philanthropic and charitable institutions, the job of "imparting skills" may be left to private institutions, including even those guided by the profit motive, *provided they are suitably socially regulated.* In other words, while private profit-making institutions may be difficult to avoid altogether in a market economy, they should be kept away from the sphere of education proper, and should be socially regulated, including having to pay taxes, like any business enterprise, on the profits they earn.

There remains the whole issue of whether the public higher education system should continue to subsidize at the tax payers' expense the education of students who are going on to get extremely lucrative jobs on the completion of their education. The typical answer suggested to this question is to raise fees. But raising fees, apart from affecting the inclusive nature of higher education, does not touch the basic issue, *which is the throwing to the winds of "income relativities " in the neo-liberal economic regime.* The income relativities in India today are too irrational to be sustainable. The income ratio between the highest paid and the lowest paid is among the highest in the world and has little relationship with the relative arduousness of the work or the relative length of the training period. These relativities have to be rectified anyway through appropriate fiscal measures. Once that happens the odium of subsidies to those who are about to become rich and who are going to get extraordinarily well-paid jobs upon completing their education, will also disappear, and that the fees will not have to be raised. The way to

overcome this odium in other words is through an appropriate incomes policy, not through merely changing the fee structure that leaves income relativities unchanged, and hence implicitly accepted, by the government.

A related issue concerns the so-called "brain drain". If using tax payers' money to subsidize students who go on to have lucrative careers is ethically questionable, using tax payers' money to subsidize students with lucrative careers providing services in the advanced countries is even more so. It constitutes both private appropriation of public resources and a "drain of wealth" overseas (to use the language of the Indian anti-colonial struggle). The existing system of allowing "brains" to "drain" away with impunity needs to be changed. And a number of alternative possible measures can be adopted for this, ranging from a minimum period of service in the country to the payment of a lump-sum amount by potential emigres, to be paid after they have settled down abroad, as a condition for leaving the country (for which domestic "sureties" would have to be found at the time of their leaving the country).

III

It was mentioned above that the real reason for the proliferation of private institutions of higher education is not the *nature and structure* of the public system, but its sheer inadequacy in terms of supply. A predominantly public higher education system cannot be sustained, and will necessarily give rise to the mushrooming of private institutions, whether licit or illicit, if the government does not spend adequately on its expansion. In fact of late in India, the most powerful argument that has appeared in justification of privatization and commoditization of higher education, refers not to the nature, structure or quality of the public system but to its insufficiency. The need of the hour, so the argument goes, is a massive expansion of the higher education system, and the government lacks the resources for this. It needs therefore to draw private funding into the higher education sphere through "public-private partnerships" to which there is no alternative. And to draw adequate private resources for such "public-private partnerships", it is necessary that the government should provide the requisite incentives (incentives in terms of suitable profits are scarcely explicitly mentioned in view of the Supreme Court injunction against profit-making in higher education). In short, restrictions of all sorts which come in the way of private financing of higher education must be removed if we are to meet our targets in the sphere of higher education.

This argument, however, is logically unsustainable. Quite apart from the fact that this entire argument is based on a confusion between *resources* and *finance,* it begs the question: if there are resources with the private sector which can be attracted for higher education through the institutionalization of "public-private partnerships", then why should the government not take these resources away from private hands through fiscal means to expand a purely public higher education system? If there was some ceiling beyond which resource mobilization through fiscal means could not be enforced, then the argument could make sense, but there are no such "natural" limits. Indeed the tax-GDP

ratio in India is far lower than what prevails in most advanced capitalist economies, including the United States, and is indeed among the lowest in the world. To forego taxing the private sector, and then to use this very fact of foregoing as an argument the induction of private sector into the sphere of higher education through "public-private partnerships", can scarcely carry conviction. In short, the resource argument for privatizing higher education cannot stand scrutiny, which is that the resource requirements for higher education in all these discussions are usually grossly overestimated. Of course, there can be no two opinions about the need for a much larger higher education system, but since there is nothing *absolute* about this need, the actual expenditure has to be calibrated in keeping with the mobilization of resources by the government. A sum of 6 percent of GDP as the expenditure on education has been a widely accepted target in India (though we are far from achieving this figure). The idea should be to get to this figure as soon as possible via government expenditure, keeping in place a higher education system that is predominantly public rather than to privatize higher education on the plea of attaining this target, and ensure that all the attendant ills of a private system, above all its deleterious effects on "nation-building", are not visited upon the country.

To reiterate, the higher education system must remain predominantly within the public domain; the inability of the government to fund its adequate expansion has to be tackled through more vigorous resource mobilization efforts rather than through relying on private resources and in the process commoditizing and privatizing higher education.

IV

Of course if the higher education system lacks quality, if it is bereft of excellence, if it does not come up to even a minimum standard, then talking about its "nation-building" role appears pointless. There can be little doubt that the higher education system in countries like India is in a poor state. It does not necessarily attract the best talents into the teaching profession; it is characterized by a sharp dualism of a handful of institutions where students get trained for lucrative and usually non-academic careers, co-existing with other institutions where the students' interest in academics is largely sapped. It is characterized by an absence of intensity in intellectual engagement, with both poles of the dualistic structure displaying this absence, the former because its students' choice of careers has little need for intellectual engagement (as distinct from professional commitment), and the latter because the uncertain career prospects of its students leaves them with little enthusiasm for whetting intellectual appetites. Learning by rote, learning from second rate textbooks, with the sole objective of just confronting the examinations has become the order of the day.

Improving the state of higher education, though an absolute social priority, is by no means easy. Stepping up public spending on higher education is of course a must. The proportion of school leavers who go on to higher education in India is much lower than in advanced countries and needs to be increased rapidly; and the facilities in institutions of higher education leave much to be desired. But an increase in spending alone is not

enough. In India a large number of central universities is about to come up, funded by the union government. It is a welcome move, both because of the expanded facilities it entails, and because central universities tend to embody a pan-Indian, non-parochial, and secular perspective that is also relatively modern in matters of caste and gender. But finding a large number of faculty members of high intellectual quality for these institutions is not easy. A whole range of complementary steps, in addition to large spending on setting up institutions, is thus required.

In discussions on what these steps should be, a powerful view has tended to focus on drawing talent from abroad for teaching positions through the introduction of non-uniform pay scales for teachers, on giving larger powers to Vice-Chancellors (some even going to the extent of suggesting that they should be made analogous to CEOs of companies), and of increasing the autonomy of universities, especially in financial matters (since central universities at any rate can scarcely be called non-autonomous in academic matters and in most administrative matters too). This, however, would amount to throwing the baby out with the bathwater. It would amount to introducing "corporatization" and "commoditization", tendencies inimical to the "nation-building" task of higher education. And differential pay-scales for teachers in the same category, far from introducing excellence, will have precisely the opposite effect, by destroying collegiality among the faculty, and introducing a further caste-structure within faculty members. Those on higher salaries, who would be typically recruited from abroad, would be ever eager to go back where the prospects of academic career advancement would be much greater, while those on low salaries would be a demoralized and disgruntled lot with low self-esteem and would soon lose whatever sparks they might have had earlier. At both ends of the spectrum therefore we would have faculty members who have little interest or pride in the institution to which they belong and who would scarcely invest efforts needed for excellence.

Improving quality requires a gigantic effort, consisting of a number of small steps in various specific areas. But the overall direction of the required movement is the very opposite of the above suggestion for "commoditization" and "corporatization". The need is not for differential salaries, but an increase in academic salaries generally, with minimum interference with the principle of uniformity of pay-scales, so that outstanding talent is drawn into the academic profession. The need is not for increasing differentials within teachers but for reducing differentials within society, i.e. the need is for an appropriate incomes policy in society as a whole. Likewise, the need is not for making Vice Chancellors into CEOs and hence snuffing out dissent and democratic debate, but for increasing the scope for authentic debate, which is a necessary condition for heightening the intensity of intellectual engagement. The need is not for making universities fend more for themselves, which is a recipe for "commoditization", but for preventing "commoditization" through greater public funding, though without destroying the frugality of academic life. The need in short is to bring back to the campuses of the institutions of higher education the exquisite joy of cultivating intellect, a profound sense of the grandeur of ideas.

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Fair Access to Higher Education Re-Visited

Some Results for Social and Religious Groups from NSS 61st Round Employment-Unemployment Survey 2004-05#

K. Sundaram*

Abstract

This paper presents some results from the NSS 61st Round Employment - Unemployment Survey, 2004-05, on the issue of fair access to social groups and religion-based population categories.

The issue is whether and to what extent the population of OBCs (Other Backward Classes) or the Muslims (in the relevant age-group and with the qualifying level of education) is under-represented in enrolments in higher education. The answer involves (for each population category and relevant age-group) a comparison of (i) their share among those with the qualifying level of education with (ii) their share among those with the qualifying level of education and currently attending institutions for under-graduate /post-graduate studies.

At the all-India level, despite a sharp rise in the share of OBCs in the total population, the extent of their under-representation in under-graduate enrolments is just 2.5 percent, down from 3.5 percent in 1999-2000 - in rural India. In urban India, the extent of OBC under-representation in under-graduate enrolments, though marginally higher than in 1999-2000, is still less than 2.0 per cent.

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In respect of post-graduate enrolments, the OBCs are significantly (by nearly 4 percentage points) over-represented in rural India, while in urban India, the OBC under-representation is just 0.3 percentage points.

In respect, in rural India, they are over-represented in under-graduate enrolments and in urban-India; the extent of under-representation is less than one percent.

Thus, for no social/religion-based population group the extent of under-representation in enrolments in higher-education is more than 2.5 percentage points. There is thus little or no case for a 27 percent reservation for OBCs in enrolments in higher education. As for the 'Creamy Layer' of the OBCs, there is even less of a case for not excluding them from any regime of quotas for the OBCs in higher education.

In this paper we re-visit our earlier discussion (Sundaram, 2006) of the issue of fair access to higher education of social groups with some results from the NSS 61st Round Employment-Unemployment Survey (EUS, for short) 2004-05[1]. To focus on a section of the population often viewed as a disadvantage-group, namely the Muslims; we extend our analysis to religion-based population categories. In all cases, the rural and the urban populations are distinguished.

The issue, as before, is whether and the extent to which a given population group say, the OBCs (Other Backward Classes) or the Muslims, in the relevant age-group and with the qualifying level of education is under-represented in enrolments in higher education. The relevant age-groups are taken to be 17-25 years for under-graduate and 20-30 years for post-graduate studies, with a higher secondary certificate and a graduate Degree, respectively taken as the qualifying level of completed education.

For reasons spelt-out in our earlier paper, the answer to the above question involves a comparison (for each population category in the relevant age-group) of (i) their share among those with the qualifying level of education with (ii) their share among those with the qualifying level of education and currently attending institutions for under-graduate /post-graduate studies, as appropriate.

Before setting up the above stated comparisons for the different social and/or religion-based groups let us report briefly the results from EUS 2004-05 on the share of the different population groups in the total population but separately for the rural and the urban populations at the all-India level (see Table 1).

1 This Survey, covering 79,036 rural and 43,374 urban households nation-wide, offers, for the OBCs, a sample size of over 114 thousand persons in rural India and a little under 75 thousand persons in urban India. For this study, the key attraction of the EUS as a data-base is that it offers a detailed coding of the level of education/course of study of those reported attending educational institution as their usual (principal) activity and of their level of completed education.

TABLE 1
Composition of All-India Rural and Urban Population by Social Groups and Religion: 2004-05

(In Percent)

Shares Social/Religious Groups	*Rural*	*Urban*
Social ***Groups***		
Scheduled Castes (SC)	10.3	3.1
Scheduled Tribes (ST)	21.3	15.0
OBCs	42.9	36.0
Others	25.5	45.9
All	100.0	100.0
Religious ***Groups***		
Hindu	83.4	77.4
Muslim	11.5	16.4
Christian	2.1	2.5
Sikh	2.0	1.5
Others	1.1	2.2
All	100.0	100.0

The key result here is that, relative to the situation in 1999-2000 (see, Sundaram, 2006), the share of the OBCs in both the rural and the urban populations records a 5to 6 percentage point rise: in rural India, from 37.0 to 42.9 percent, and in urban India, from 30.9 to 36.0 percent. In the total (rural plus urban) all-India population, the share of the OBCs has gone up from 36 percent in 1999-2000 to close to 41 percent in 2004-05. Almost entirely, this rise in the share of OBCs is matched by a decline in the share of the residual (non-SC/ST, non-OBC) category of Others - from 36.0 to 25.5 percent in rural India and from 51.1 to 45.9 percent in urban India. So that, possibly because of greater awareness of updated/expanded list of OBCs at the state level and/or of the potential benefits of being counted among the OBCs, some of those classified as part of the (residual) social group of'others' in 1999-2000 are classified as OBCs in 2004-05.[2]

A classification of the population by (self-declared) religious affiliation shows a larger share for Hindus in rural India than in urban India where they accounted for over 77 percent of the population. By contrast, Muslims have a higher share in urban India as do the Christians and the residual category of others. In the country as a whole, the share of Hindus was 81.7 per cent, of the Muslims 12.9 per cent, the Christians 2.2 percent and the Sikhs 1.9 percent with the residual category of others accounting for the balance 1.3 per cent.

2 It needs to be stressed that in the NSS Surveys, the information on social-group affiliation is based entirely on the response of the informants and not on any state-level list of social groups. Hence, NSS estimates of proportion of ST/SC households/population are not strictly comparable with the corresponding figures available from the Population Census.

Also as a backdrop to our discussion of the issue of fair access to higher education, we present, for each social/religious group, the proportion of the population with "higher secondary and above" and "graduate and above" levels of completed education. These are presented separately for the total (all-age) population and the population in the 17-30 age-group (Table 2).

Focusing on the 17-30 age-group to get the current picture, we find that even at the end of the first quinquenium of the 21st century, less than one-eighth of the rural population and barely a third of the urban population have a "higher secondary" and above level of education. As for those among them who have at least a graduate degree, they form less than 4 percent and in rural India less than 15 percent as urban India. With close to 90 percent of the rural youth (nearly 67 percent in urban India) not even having a higher secondary certificate, the level of educational backwardness among them is indeed staggering.

TABLE 2

Proportion of Population with Higher Education in Rural and Urban India by Social Groups and Religion: All-India, 2004-05.

Percentage of Population by Level of Completed Education

	Higher Secondary and Above				***Graduate & Above***			
	Rural		***Urban***		Rural		Urban	
Segment	**All-Age Population**	**Population in 17-30 age-group**	**All-Age Population**	**17-30 age-group**	**All Age Population**	**17-30 age-group**	**All Age Population**	**17-30 age-group**
ST	2.1	5.8	14.7	28.2	0.7	1.5	6.2	9.8
SC	3.0	8.3	9.1	19.4	0.9	2.1	3.6	6.7
OBCs	4.4	11.5	13.4	26.5	1.4	3.1	5.9	10.2
Others	8.0	18.3	27.3	44.1	3.1	6.0	15.5	21.3
All	4.8	12.0	19.2	33.4	1.6	3.5	10.0	14.7
Hindu	5.0	12.4	20.8	35.8	1.7	3.7	10.9	15.9
Muslim	2.5	6.6	8.5	17.1	4.8	1.7	3.8	6.6
Christian	8.9	18.6	25.5	46.8	2.5	4.7	11.8	18.9
Sikh	6.7	18.4	26.5	41.8	1.5	3.4	14.7	17.7
Others	5.9	13.4	29.5	54.3	1.7	3.8	16.9	27.6

In terms of having at least a graduate degree, among social groups, the Scheduled Tribes are the worst-off group in rural India while in urban India, it is the Scheduled Castes who are the worst-off with less than 7 percent of their 17-30 population having at least a graduate degree. Even for the best-off social group - the non-SC/ST, non-OBC, residual group of 'others' - only 6 percent of their 17-30 population have at least a graduate degree in rural India. In urban India too, this proportion is only a shade above one-fifth. For the OBCs, in both rural and urban India, the proportion of their 17-30 population having a 'graduate and above' level of education is about half of that for "others". Seen from a different perspective, relative to their share in the

total population in this age-group - 42.3 percent in rural India and 35.8 percent in urban India - the share of OBCs in the population of those in this age-group with a 'graduate and above' level of completed education (37.9 percent in rural India and 24.9 percent in urban India) is lower by a little over 4 percentage points in rural India and by close to 11 percentage points in urban India. As we argue below, this does not imply an equivalent level of under-representation in enrolments for higher education.

By religion, both in rural and urban India, the worst-off group are the Muslims. In rural India, the Christians with less than 5 percent of their 17-30 population having a 'graduate and above' level of completed education, is the best-off religious group. In urban India, it is the religion-based residual category of "others" that has the highest proportion of their 17-30 population with a 'graduate and above' level of completed education. With a share of over 80 percent in the total population, the performance of the Hindus, as a group, is barely above the average for the total population.

Against the backdrop of widespread educational backwardness cutting across religion an social-groups, let us turn now to the issue of fair access to enrolments in higher education.

As discussed in our earlier paper (Sundaram, 2007), assessments of fairness of access to higher education, need to bear in mind that entry at each step in the educational pyramid is conditional on the successful completion of the preceding stage of education. Thus, holding a graduate degree is a must for entry into a post-graduate programme and a higher secondary or equivalent qualification is necessary for entry into an under-graduate programme, and so on down the line.[3]

As noted in our earlier paper, the codes used in the survey to describe the level of education for which persons are attending educational institutions cover broad categories, such as secondary and higher secondary, and, 'graduate and above'. In terms of completed level of education, however, secondary or higher secondary carry separate codes. Now, those attending institutions for 'graduate and above' level of education will include both the under-graduate and post-graduate students. However, the under-graduate students will have 'higher secondary' as their highest level of completed education while the post-graduate students will have a 'graduate and above level' of completed education.

In view of the foregoing, to assess whether the OBCs or the Muslims have had a fair share in enrolments to under-graduate programmes, we will focus on the 17-25 age-group. For this age-group, we will compare the share of a given social group in the population with a higher secondary certificate with their share among those currently attending institutions for 'graduate and above' level of education and having higher secondary as their highest level of completed education.

3 It is only at the elementary or primary school stage that we are free of this consideration. At this level, and only at this level, fair access will require that the share of each social/religious group in enrolments be equal to their share in the population in the relevant age-group.

Tables 3 and 4 present, respectively, for the all-India rural and the urban populations, the relevant (percentage) shares to assess the presence and extent of under-representation in enrolments for under-graduate studies. This is done separately for the four social groups: the Scheduled Tribes, the Scheduled Castes, the OBCs and residual category of 'others'. In terms of religion, we distinguish the Hindus, the Muslims, and, a residual category of 'other's covering Christians, Sikhs, Buddhists and others.[4] For the social group OBCs, we also distinguish, by religion, the Hindus, the Muslims and the residual category of others as defined above.

TABLE 3

Share of Social/ Religious Groups in the 17-25 Population (Total and with Higher Secondary) Attending Institutions for Under-Graduate Studies in Rural India: All-India, 2004-05

Percentage Shares	*Thiol*	*With Higher Secondary*	*With Higher Secondary and Attending Institutions for Under Graduate Studies*
Social Groups (All Religions)			
Schedule Tribes	10.3	5.7	7.4
Schedule Castes	21.3	15.8	15.0
OBCs	42.6 (43.2)	40.8 (38.5)	38.3 (36.8)
Others	25.8	37.7	39.4
Religion (All Social Groups)			
Hindu	82.9	85.4	83.9
Muslim	11.7	7.0	9.7
Others	5.4	7.6	6.4
OBCs by Religion	42.6	40.8	38.3
Hindu	37.3	36.7	33.3
Muslim	4.3	2.7	3.5
Others	1.0	1.4	1.5

Note: Figures within brackets for OBCs represent the situation when we exclude the states with some history of reservations for OBCs i.e. Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, and West Bengal.

Consider first, the social group categories. In rural India, both the Scheduled Tribes and the residual category of (non-SC/ST, non-OBC) others are over-represented in under-graduate enrolments. Curiously, for both these social groups, the difference between their shares in the population attending under-graduate studies and

4 The clubbing of Christians and Sikhs with others has been necessitated by the relatively small sample size of persons belonging to these religions who are attending 'graduate and above' level of education and having higher secondary as their highest level of completed education is, individually, well below 100.

their share in the population with higher secondary certificate is identical: 1.7 percentage points.

TABLE 4

Share of Social/Religious Groups in the 17-25 Population (Total and with Higher Secondary) Attending Institutions for Graduate Studies in Urban India: All-India, 2004-05

Percentage Share	*Total*	*With Higher Secondary*	*With Higher Secondary & Attending Graduate Studies*
Social Groups (All Religions)			
Scheduled Tribes	3.2	3.3	3.4
Schedules Castes	16.3	10.7	10.0
OBCs	35.9 (31.8)	29.5 (24.0)	27.6 (22.3)
Others	44.6	56.5	59.0
Religion (All Social Groups)			
Hindu	76.7	82.6	82.9
Muslim	17.5	9.6	8.9
Others	5.8	7.8	8.2
OBCs (by Religion)	35.9	29.5	27.6
Hindu	28.4	25.3	24.2
Muslim	6.5	2.8	2.2
Others	1.0	1.3	1.2

Note: Figures within brackets for OBCs represent the situation when we exclude the states with some history of reservations for OBCs i.e. Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, and West Bengal.

Focusing on the OBCs', we note above that their share in the total population in the 2004-05 E\JS relative to their share in the 1999-2000 has gone up by over 5 percentage points. In the rural population in the 17-25 age-group, the OBCs share has gone up by 6 percentage points - from 36.6 percent to 42.6 per cent. However, their share in the population (in the 17-25 age-group) with a higher secondary certificate has gone up from 31.1 percent to 40.8 percent i.e. by 9.7 percentage points. And, their share in under-graduate enrolments (all subjects) went up even more sharply - from 27.6 percent in 1999-2000 to 38.3 percent in 2004-05 - by 10.7 percentage points. So, while the OBCs continued to be under-represented in under-graduate enrolments, the extent of under-representation has gone down from 3.5 percentage points in 1999¬ 2000 to 2.5 percent points in 2004-05.

It needs to be stressed that this result on the extent of under-representation of OBCs in under-graduate enrolments is not conditioned by the inclusion of states with a history of reservations in higher education for the OBCs. In fact, the exclusion of the four southern states and West Bengal reduces the OBC under-representation from 2.5 to 1.7 percentage points (see Table 3R).

For the Scheduled Castes also, the extent of under-representation in under-graduate enrolments has gone down from 1.3 percentage points in 1999-2000 to 0.8 percentage points in 2004-05.

A classification by religion shows that, in rural India relative to their share in the population in the 17-25 age-group with a higher secondary certificate, the Muslims are, if anything, over-represented, while the Hindus and the residual group of 'others' are under-represented.

In urban India too, the residual social group of 'others' is over-represented in under-graduate enrolments. As in rural India, the OBCs are under-represented but to a slightly smaller extent - 1.9 percentage points as against 2.5 percentage points. However, between 2000 and 2005, unlike in rural India, the extent of OBC under-representation has gone up slightly from 1.3 to 1.9 percentage points. When classified by religion, the difference between the share of a group in the population (in the 17¬ 25 age-group) with a higher secondary certificate and among those attending under-graduate studies, is quite small - under one percentage point. In urban India, as in rural India, the exclusion of the southern states and West Bengal reduces the OBC under-representation in under-graduate enrolments - albeit marginally.

Thus, as on 1st January 2005, relative to their share in the population (in the 17-25 age-group) with the qualifying level of education (namely, a higher secondary certificate), for no social group or for groupings by religion is the extent of under-representation in enrolments for under-graduate studies - where present -more than 2.5 percentage points. This is true not only in respect of the OBCs but also in respect of the Muslims.

We examine next the situation in respect of enrolments for post-graduate studies. As noted previously, the relevant age-group is 20-30 and the minimum qualification for entry into a post-graduate programme of studies is a graduate degree. Tables 5 and 6 present, respectively for the rural and the urban populations, the percentage shares of each social groups in:

i) the total population in the 20-30 age-group;
ii) the population in this age-group with a graduate degree; and,
iii) the population in this age-group with a graduate degree and attending educational institutions for 'graduate and above' level of education.[5]

Consider first the case of social groups in rural India. We have a striking result. The only social group under-represented in post-graduate enrolments relative to their share in the population in the 20-30 age-group with a graduate degree is the residual (non-SC/ST, non-OBC) social group of 'others'. The OBCs are significantly - by

5 Sample-size considerations have necessitated restricting this analysis to social groups only. Even in respect of the social groups, given the relatively small sample size, in respect of the Scheduled Tribes and the Scheduled Castes each taken separately of the number of persons in the 20-30 age-group with a graduate degree and attending post-graduate programmes, it is best to view the two social groups as a single category.

nearly 4 percentage points - over-represented in post-graduate enrolments. This has been due to a sharp rise - from 26.4 in 1999-2000 to 41.8 percent in 2004-05 - in their share among those in the age-group with a graduate degree who are currently attending institutions for post-graduate studies. This is true for all OBCs irrespective of whether they are Hindus, Muslims or belong to other religions. The exclusion of the four southern states and West Bengal increases the extent of over-representation - from 3.9 to 9.4 percentage points.

TABLE 5

Share of Social/Religious Groups in Population in the 20-30 Age-Group (Total and with Graduate Degree) and Attending Institutions for Post-Graduate Studies in Rural India, All-India, 2004-05

Social Groups (All Religions)	*Percentage Shares*		
	Total	**With Graduate Degree**	**With Graduate Degree & Attending Post-Graduate Institutions**
Scheduled Castes	10.9	5.0	7.0
Scheduled Tribes	21.1	12.9	17.3
OBCs	42.1 (42.8)	37.9 (35.9)	41.8(45.3)
Others	25.9	44.2	34.0

Note: Figures within brackets for OBCs represent the situation when we exclude the states with some history of reservations for OBCs i.e. Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, and West Bengal

TABLE 6

Share of Social/Religious Groups in Population in the 20-30 Age-Group (Total and with Graduate Degree) and Attending Institutions for Post-Graduate Studies in Urban India: All-India, 2004-05

Social Groups (All Religions)	*Percentage Shares*		
	Total	***With Graduate Degree (GD)***	***Graduate and Attending Post¬ Graduate Institutions***
Scheduled Tribes	2.8	2.2	2.8
Scheduled Castes	15.4	7.4	5.6
OBCs	35.7(31.2)	25.4(19.7)	25.1 (20.1)
Others	46.1	65.0	66.5

Note: Figures within brackets for OBCs represent the situation when we exclude the states with some history of reservations for OBCs: Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, and West Bengal.

In urban India, among social groups, the extent of under-representation in post-graduate enrolments is highest for the Scheduled Castes - 1.8 percentage points - and the least - 0.3 percentage points - for the OBCs. The exclusion of the southern states

converts this marginal under-representation to a marginal (0.4 percentage points) over-representation of OBCs in post-graduate enrolments.

Finally, a brief comment and some results bearing on the issue of exclusion of the so-called "Creamy Layer" of the OBCs from the purview of the proposed 27 percent quota for the OBCs in admissions to institutions for higher education.

As we had noted in our earlier comment on the issue (Sundaram, 2007), in a quota regime, the quota seats will first be filled from all eligible Reserved Category Students, with the further provision that all among them making the 'cut' on the basis of the cut-offs for the General Category Students are not to be counted towards the filling-up of the quota. It is only when the number of eligible applicants from the Reserved Category falls below the number of reserved seats that the balance of reserved seats will get transferred to the General Category.

In the sort of quota regime outlined above, the relevant questions are: (i) whether in a non-quota regime the 'Creamy Layer' gets a fair representation in the admissions to the under-graduate and post-graduate courses; and (ii) whether the exclusion of the "Creamy Layer" so depletes the pool of the eligible candidates of the OBCs that there are not enough of them to fill the quota.

For an empirical answer to these two questions from the Employment-Unemployment Survey, we need to define a relevant cut-off figure specified in terms of monthly per capita expenditure. A useful starting point is provided by the cut-offs underlying the "Income/Wealth Test" provided in the Schedule to OM No. 36012/22/93-(SCT) dated 8th September, 1993 of the Department of Personnel and Training, Government of India, which contains the criteria to determine the 'Creamy Layer' amongst the OBCs. As per this schedule, "the Income/Wealth Test prescribes that the sons and daughters of persons having gross annual income of Rs. 2.50 lakhs or above or wealth above the exemption limit as prescribed in the Wealth Tax Act for a period of three consecutive years, would be treated to fall in Creamy Layer", with the provision that, "Income from salaries or agriculture land shall not be clubbed".

Clarifications regarding Creamy Layer amongst OBCs have been spelt out in a Circular [No. 36033/0/2004-ESH.(Res)] dated 14th October 2004 issued by the Department of Personnel and Training, Government of India.

Specifically, in respect of the Income Test, it is clarified that "Income of the parents from the salaries and from the other sources (other than salaries and agriculture land) is determined separately. If either the income of the parents from the salaries or the income of the parents from other sources (other than salaries and agriculture land) exceeds the limit of Rs. 2.50 lakhs per annum for a period of three consecutive years, the sons and daughters of such persons shall be treated to fall in Creamy Layer. But, the sons and daughters of parents whose income from (sic) other sources (salaries?) is also less than Rs. 2.50 lakhs per annum will not be treated as Creamy Layer even if the sum of income from salaries and the income from other sources is more than Rs.2.50 lakhs per annum for a period of three consecutive years.

It may be noted that income from agriculture land is not taken into account while applying the Test (Para 9 of the Circular, emphasis added).

From the emphasized portion of the DPT Circular of 24th October 2004 quoted above, in principle, sons and daughters of parents whose total income, (excluding income from agriculture land), is as high as Rs.4.99 lakhs per annum could escape falling into the Creamy Layer category.

Given that, in the top two expenditure classes roughly defining the 90-95th and the 95-100* percentile, the average household sizes were 4.06 and 3.64 in rural India and 3.26 and 2.90 in urban India in 2004-05[6], assuming an average family size of 4 members in rural India and of 3 members in urban India for the population in the 'Creamy Layer' would be in order. The Income Test, as clarified by the DPT Circular of 24th October 2004, would thus translate into an annual per capita income of Rs. 1.25 lakhs in rural India and Rs.1.33 lakhs in urban India, excluding in both cases income from agricultural land.

Allowing for an average savings rate of 40 percent, with a further 10 percent allowance to take account of the effect in terms of an understatement of Consumer Expenditure, of the use of an abridged one-page schedule in the Employment-Unemployment Survey, an income cut-off of Rs. 1.25 lakhs per capita to define the Creamy Layer will translate to a monthly per capita consumer expenditure of Rs.5208 in rural India. Similarly, for urban India, an annual per capita income of Rs.1.33 lakhs would translate into a monthly per capita expenditure of Rs.5542. So all OBCs with a monthly per capita expenditure in EUS of Rs.5208 or more in rural India and of Rs.5542 or more in urban India would, on the considerations set out above, constitute the Creamy Layer amongst the OBCs.

Now, the lower limit of monthly per capita expenditure defining the 98-99th percentile of the total population in the NSS 61st Round Employment-Unemployment Survey, 2004-05, is estimated to be Rs.1441 in rural India and Rs.3034 in urban India. For the 99-100* percentile, the corresponding lower-limits are Rs.1825 in rural India and Rs.3464 in urban India.

In view of the foregoing, it would be fair to say that, in terms of the 'Income Test' defining the Creamy Layer amongst the OBCs, as clarified by the October 2004 Circular of the Department of Personal and Training, Government of India, almost top 2 percent of the population in terms of monthly per capita consumer expenditure in the Employment-Unemployment Survey, 2004-05.[7]

Nevertheless, keeping in view the sample-size considerations, our empirical analysis of the Creamy Layer issue is focused on the outcomes for OBCs located in

6 See NSSO Report on Level and Pattern of Consumer Expenditure 2004-05, Tables 1R and 1U. (Government of India, 2006).

7 This will hold true for rural India even if we take the Income Test cut-off to be half i.e. just Rs. 2.50 lakhs - again, excluding income from agricultural land. For urban India with an Income cut-off of Rs.2.50 lakhs, the implicit MPCE cut-off of Rs.2771 would define the top 4 percent of the all-India urban population.

the expenditure classes defining the top 10 percent of all-India population - separately for the rural and the urban population[8]. The relevant results are presented in Table 7.

TABLE 7

Share of OBCs in the Total, Eligible and Currently Attending Populations in the Top-Most Decile of the Rural and Urban Populations: All India, 2004-05 (%)

Respective OBC Populations in the90-10(f Percentile Segment	*Total 17-25 Population*	*17-25 Population with Higher Secondary*	*17-25 Population with Higher Secondary & Attending Graduate Studies*	*Total 20-30 Population*	*20-30 Population with Graduate Degree*	*20-30 Population *) with Graduate Degree and Attending Most-Graduate \ Studies*
Rural	40.7	37.1 (27.9)	38.2 (37.1)	40.0	32.1 (31.3)	35.2 (36.4)
Urban	22.2	20.4 (13.8)	19.3 (16.7)	20.8	18.5 (19.5)	18.0 (24.0)

Notes: Figures within brackets give the share of the top-most decile in the total OBC population that is eligible for Graduate /Post-Graduate studies and in the total OBC population that is currently attending institutions for Graduate post-Graduate Studies.

In respect of under-graduate studies, in rural India, in the top-most decile the OBCs accounted for 37 percent of the 17-25 population with Higher-Secondary and 38 percent of those in the age-group and decile with higher-secondary and attending under-graduate studies. The corresponding percentages for urban India are, respectively, 20.4 and 19.3. So, in the top-most decile, even in the absence of any quotas for the OBCs, the OBCs are slightly over-represented in rural India (by a little over one percentage point) and slightly under-represented in urban India (also by a little over one percentage point). Parallel results for access to post-graduate studies indicate that, in rural India, the OBCs in the top-most decile are significantly over-represented, while in urban India they are marginally (one-half percentage point) under-represented.

As for the pool of qualified OBCs, excluding the OBCs in the top-most decile, close to 72 (86) percent of the OBCs in the 17-25 age groups with higher-secondary certificate in rural (urban) India are available. For post-graduate studies, the relevant proportions are 69 percent in rural India and 80 percent in urban India. It needs to be stressed that, for a more narrowly defined 'Creamy Layer', say, the top 2 percent of the population, or even the top 4 percent of the population, the pool of qualified OBCs after exclusion of the Creamy Layer so defined would be even larger.

8 To put this in perspective, as per EUS 2004-05, the lower limit of MPCE defining the 90th percentile is Rs.865.21 in rural India and Rs.1919.10 in urban India.

So, if there is little case for a 27 percent quota for the OBCs, there is even less of a case for not excluding the Creamy Layer among them from the preview of such quotas.

To sum up in rural India, despite a sharp rise in the share of the OBCs in the total population (by 5 percentage points or more) and a sharper rise in their share in the population in the 17-25 age-group with a higher secondary certificate, an even sharper rise in their share in under-graduate enrolments has resulted in a reduction in the extent of their under-representation in under-graduate enrolments from 3.5 to 2.5 percentage points between 1999-2000 and 2004-05. As for enrolments into programmes for post-graduate studies, the OBCs are over-represented by nearly 4 percentage points. Even in urban India, the extent of OBCs under-representation in under-graduate enrolments, though higher than in 1999-2000, is still less than 2.0 percent.

In respect of Muslims too in rural India, they are, if any thing over-represented in under-graduate enrolments. In urban India, the extent of under-representation of Muslims in under-graduate enrolments is less then one (0.7) percentage point. Clearly, relative to their share in the population with the qualifying level of education, no social or religious group is under-represented in enrolments to higher education by more than 2.5 percentage points. Therefore, there is not much of a case for a 27 percent reservation for the OBCs in enrolments to higher education and, if, despite this, we do have quotas for the OBCs, there is even less of a case for not excluding the 'Creamy Layer' among them from the preview of such quotas. Public policy aimed at redressing social group inequalities in educational attainments must focus on where the problem is more acute: the gap between the share of disadvantaged groups in population (in the relevant age-group) and their share in the population eligible for enrolments for higher education - a gap that is quite significant for Muslims in both rural and in urban India and for OBCs in urban India. Persistence of such gaps for the Scheduled Tribes and Scheduled Castes despite a history of reservations, points to the urgent need to focus on quality in school-level education. OBC quotas in higher education merely divert attention and resources from more difficult but necessary tasks lower down in the educational pyramid.

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Progress in Participation in Tertiary Education in India from 1983 to 2004

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Abstract

Using nationally representative household surveys, this paper examines the trends in attainment, enrolment, and access to tertiary (higher) education in India from 1983 to 2005. The findings suggest that there has been considerable progress in attainment and participation; however, they remain low. Important gaps exist in enrolment between rich and poor, rural and urban areas, men and women, disadvantaged groups and the general population, and states. Analysis of transition rates from secondary education to tertiary education and regression analysis indicate that inequality in tertiary education between disadvantaged groups and the general population is explained by low completion rates of secondary education. Inequality in tertiary education related to income, gender, rural residence, and between states is explained by: (i) differences in completion rates of secondary education, and (ii) differences in the probability of transitioning from secondary education to tertiary education. In particular, the importance of household income has grown markedly. Equitable expansion of secondary education is therefore critical for improving the equity of tertiary education. There is also a need to help qualified youth from low-income families and rural backgrounds to attend tertiary education, in particular the technical and engineering streams, in which participation is lower.

Introduction

This paper examines the attainment and access of tertiary (higher) education in India over the past two decades (1983-2004). There has been an intense effort by the Government

* The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors. They do not necessarily represent the view of the World Bank, its Executive Directors, or the countries they represent.

The authors thank Amit Dar, Peter Darvas, Puja Dutta, Pawan Agarwal, Shashi Shrivastava, Prof. C. S. Jha, and Dr. S. Alvi for helpful comments. Any remaining errors and omissions remain ours.

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of India to expand primary education in this period, and as a result, the number of children participating in primary education has improved, and the improvements are more visible among children from rural areas, educationally lagging states, girls, and those from socially and economically disadvantaged groups (Shankar, 2007).

Although the goal of universal elementary schooling is yet to be achieved, some attention is shifting to secondary and tertiary education levels to absorb the massive increase in the number of students graduating from primary schools and to meet increased labour market demand for qualified workers. The approach paper for the 11th Five-Year Plan (2007-2012) emphasizes the need for expansion of tertiary education: *"India has a well-developed and comprehensive higher education system which has served well thus far, but is now inadequate. The extent of access it provides is limited. Only about 10% of the relevant age group goes to universities whereas in many developing countries, the figure is between 20 and 25%. There is an overwhelming need to undertake major expansion to increase access to higher education. "* (GOI, 2007).

In addition, with increasing integration of the Indian economy with the rest of the world and knowledge becoming a vital factor for economic growth, the importance of tertiary education has increased. The returns to tertiary education in urban India increased by almost 20 percentage points (compared with a below primary educated regular worker, a tertiary educated regular worker was paid 82 percent higher wages in 1993 and 101 percent higher wages in 2004) between 1993 and 2004 (Azam, 2008b). The wage premium for tertiary educated workers compared with secondary educated workers or workers with lower levels of education increased sharply in the late 1990s. Although the increase in the wage premium for tertiary educated workers is mostly driven by demand shifts in favor of workers with a tertiary education, the demand shifts occurred in both in the 1980s and 1990s. The increase in relative supply of tertiary workers during 1983¬ 1993 offset the demand shift, limiting the wage premium increase. But during 1993-1999, the growth rate of the relative supply of tertiary workers decelerated, whereas relative supply was virtually stagnant during 1999-2004. Both of these periods saw an increase in the wage premium as the countervailing supply shift was weak (Azam, 2008a).

So there is a growing need to educate more young people to a higher standard to meet the increasing demand. Furthermore, a degree has become a basic qualification for many skilled jobs. The quality of knowledge generated in higher education institutions, and its availability to the wider economy, is becoming increasingly critical for national competitiveness (World Bank, 2000).

Tertiary education in India is comprised of diploma courses and under-graduate, graduate, and PhD degrees. Tertiary education consists of technical and general streams (the technical stream consists of agriculture, medicine, engineering, crafts, and some other courses).[1] There are four types of educational institutions that provide tertiary education in India - government institutions, local institutions, private aided institutions,

[1] Technical courses offered after higher secondary level are traditionally considered part of higher/tertiary education.

and private unaided institutions.[2] In 2006-07, there were 369 universities and 18,064 colleges. The total number of students was reported to be 11.03 million - 1.43 million (13 percent) in universities and 9.6 million (87 percent) in affiliated colleges (GOI, 2007). In the spheres of technical education, there were about 1,265 engineering and technology colleges, 320 pharmacies, 107 architecture schools, and 40 hotel management institutes, making a total of about 1,749 institutions in 2004.

Other than the general information stated above, the trends in participation in tertiary education in India are not well described in publicly available documents. This limits information-based policymaking, the ability to measure progress and set targets. In particular, trends in attainment, enrolment, and transition rates across population segments are not available in a consistent manner. Nevertheless, there are frequent and heated debates on the inequality in participation in tertiary education across population segments, such as gender, religious affiliation, Scheduled Caste (SC), Scheduled Tribes (ST), Other Backward Classes (OBCs), and income quintiles.[3] To reach a more equitable tertiary education system with access to all qualified youth regardless of their background, it is crucial to understand the basic trends in attainment and access over time and how these key indicators differ across social groups, religion, geographical areas, income levels, and gender. This need for basic information motivates this paper. The paper does not seek to evaluate the impact of policies or interventions, or test the factors driving the trends. It merely seeks to present the basic trends.

The findings of the paper are:

- Although considerable progress has been made in the Education Attainment Rate (EAR) and Gross Enrolment Ratio (GER), both these remain below 9 percent and 13 percent, respectively. Large gaps both in attainment and enrolment are between: genders, social groups, religious groups, rural and urban areas, income groups, and states.

[2] Government institutions include all institutions run by the Central and State Governments, Public Sector Undertakings or Autonomous Organizations, which are predominantly financed by the government. Institutions run by municipal corporations, municipal committees, notified area committees, zilla parishads, panchayat samitis, cantonment boards, etc. are local body institutions. Private aided institutions are administered by individuals or private organizations and receive maintenance grant from the government or local body. Institutions that are managed by individuals or a private organization that do not receive maintenance grant either from a government or a local body are private unaided institutions.

[3] The Indian state recognized the former untouchables or Scheduled Castes (SCs) and Scheduled Tribes (STs) as disadvantage as far back as in the 1950s. Legal safeguards were provided against discrimination in the Constitution. One of the objective of the government since independence is amelioration of the conditions of these disadvantaged groups. Since 1993, the Other Backward Castes - castes presumed to be slightly better positioned than the SCs/STs in terms of caste hierarchy- is also recognized as a disadvantaged group. India has 22.5 percent of tertiary education seats reserved for the SCs and the STs since 1950.

- While most of the gaps have diminished over time, at least in relative numbers, the gap between income groups has widened.
- Once we condition access to tertiary education on successful completion of higher secondary education, most of the gaps in attainment and enrolment are reduced significantly, with the exception of the gap observed between income groups. The transition rate from completion of higher secondary to tertiary education is 70 percent.
- Economic status, gender, and area of residence are key determinants of the transition to tertiary education after completion of higher secondary education.
- Thus, the distortions creating unequal representation in tertiary education lie primarily at the lower rungs of the education ladder and secondarily in access to tertiary education.

The findings of the paper suggest that a more equal tertiary education system requires a sustained effort to improve retention and completion at lower stages of the education system. However, there is also a need to focus attention on the transition from secondary to tertiary education. In particular, youth from low-income families and rural areas are statistically less likely to attend tertiary education, even when they have completed higher secondary education. It is therefore important to step up initiatives that support increased access to tertiary education for students in low-income and rural families. Further understanding of the reasons behind low attendance of female students and rural students is equally necessary to design interventions.

The rest of the paper is organized as follows. Section 2 describes the data and methodology, Section 3 presents the simple empirical findings, Section 4 examines and discusses the determinants of access to tertiary education based on regression analysis, and Section 5 gives conclusion. Annex A contains a primer on the education system in India for readers who are unfamiliar with India's education system, and Annexes I to III present the complete set of indicators and regression results.

Data and Methodology

Data Description

This paper draws data from the Employment and Unemployment Schedule, administered by the National Sample Survey Organization (NSSO), Government of India. Data from the 38th, 43rd, 50th, 55th, and 61st rounds - conducted in 1983, 1987-88, 1993-94, 1999-00, and 2004-05, respectively - are used (referred to as 1983, 1987, 1993, 1999, and 2004 in this paper).[4] NSS data provide information about current attendance at different levels of education. In addition, data from the Education Schedule conducted by NSSO in 1995-96 are also used. Each employment survey covers around 120,000 households, and around

[4] NSSO conducts thick round survey at five-year intervals (called 'Quinquennial Round'). Data before 1983 is not available.

600,000 individuals. The samples are based on stratified random sampling and all the analysis in this paper uses survey weights.

In 2000, the states of Jharkhand, Chhattisgarh, and Uttarakhand were carved from Bihar, Madhya Pradesh, and Uttar Pradesh, respectively. For the state level analysis, these states are included with the parent states to maintain comparability across time.[5]

An individual, who has already completed a higher secondary degree, and is attending diploma (such as a polytechnic course) or degree course, is considered attending tertiary education.[6]

Methodology

Three indicators measure attainment and participation. Each measure is described below.

Educational Attainment Rate

Educational Attainment Rate (EAR) measures the percentage of the population that attains a particular educational level. In this paper, EAR for tertiary education is defined as the ratio of number of persons in age-group 25-34 years who have completed a tertiary education degree, to total population in the same age-group.[7] It measures completion of tertiary education prior to the age of 34, regardless of when the education was attained. In addition, it is free from the burden of history that comes through inclusion of higher age groups.[8]

Gross Enrolment Ratio

Gross Enrolment Ratio (GER) is the ratio of the number of students currently enrolled in a given level of education regardless of age and the population of the age group that officially corresponds to the given level of education.[9] For tertiary education, the GER is:

$$GER = \frac{\text{Total number of students enrolled in tertiary education}}{\text{Total population in age 18 - 23}}$$

[5] Information for all states is given in the Annex.

[6] Similar approach is adopted by "Working Group on Higher Education, GOI (2006b)." Before 1993 data do not distinguish between lower secondary and higher secondary. In this case secondary completion is taken as criterion. It may increase the tertiary attendance marginally as some students attending diploma courses at higher secondary level are counted as attending tertiary education.

[7] Approximately 92-94 percent of tertiary attending students (graduate and post-graduate degrees) are less than 25 years.

[8] Educational Attainment Rate for age-group 15-64 is presented in Annex II.

[9] The NSS data collect information on children's current attendance rather than on enrollment. In this analysis, attendance and enrollment are used interchangeably.

The Net Enrolment Ratio (NER) is an alternative measure of access. However, part of the student population is outside the expected age cohort of 18-23, in particular in middle and high-income countries. GER is, therefore, the standard enrolment indicator for tertiary education.[10]

Transition Rate

Entry in tertiary education requires completion of higher secondary education first. The characteristics of the student body in tertiary education, therefore, depends on who and how many graduate from secondary education, and on who and how many of those transit from secondary to tertiary education. To measure the last step, the transition step, we compute the transition rate:

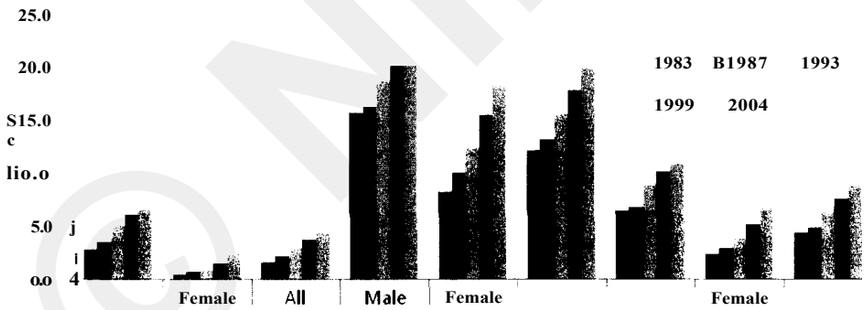
$$\text{Transition Rate} = \frac{\text{Total population in age group 18-23 who either attends or have completed higher education}}{\text{Total population in age group 18 - 23 who have completed higher secondary education}}$$

Findings

Educational Attainment Rate (EAR)

FIGURE 1

Educational Attainment by Gender/Sector (Age 25-34)



1983	2.9	0.5	1.7	15.8	8.2	12.2	6.4	2.4	4.4
1987	3.5	0.8	2.2	16.2	10.0	13.2	6.7	3.0	4.9
1993	5.0	0.9	2.9	18.6	12.4	15.6	8.8	3.8	6.3
1999	6.1	1.6	3.7	20.1	15.5	17.8	10.0	5.2	7.6
2004	6.5	2.4	4.4	21.6	18.3	20.0	11.0	6.6	8.7

Figure 1 presents the attainment of tertiary education by gender and sector. There has been considerable progress in attainment during the two decades covered by this study.

Age distribution of students currently attending in higher education is given in Annex I, Table 1.

Yet the attainment rate is low, especially in rural areas. Attainment in rural areas is less than one-fourth of that in urban areas. Attainment by females is only a third of the attainment by males in rural areas. In urban areas, the gap in EAR between the genders has decreased significantly during the past two decades because of significant improvement in female EAR (female EAR increased by 10.1 percentage points while male EAR increased only by 5.8 percentage points during 1983-2004).

FIGURE 2
Educational Attainment by Social Groups (Age 25-34)

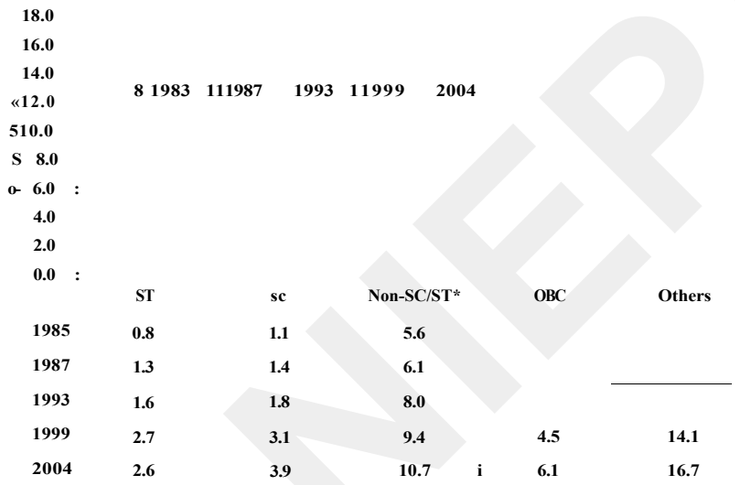
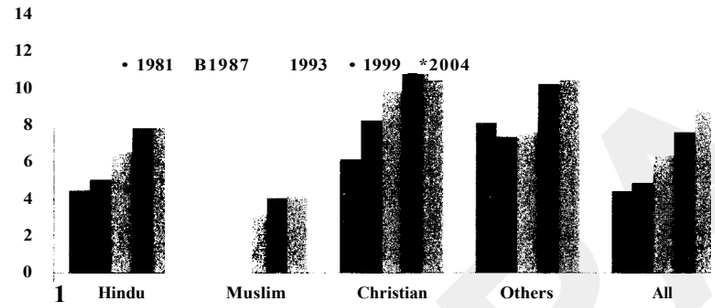


Figure 2 presents the attainment rate for different social groups. The EARs for two disadvantaged groups, the SCs and the STs, were very low in 1983. Although steady progress was made during 1983-2004, the EAR still remains very low. There exists a huge gap in attainment between the "Others (general category)" and the two disadvantaged groups (SCs and STs). The OBCs have higher attainment than the SCs and the STs; however, it is below the average national attainment. Figure 3 presents attainment for different religious groups. Muslims have the lowest attainment, as highlighted by the Sachar Commission Report of 2006 (GOI, 2006d). Importantly, the attainment of the SCs, STs, and Muslims is almost half the national average. Targeted efforts seem to be needed to raise the attainment of these disadvantaged groups.

FIGURE 3

Educational Attainment by Religion (Age 25-34)

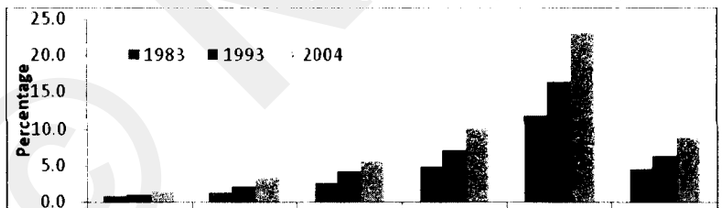


1	Hindu	Muslim	Christian	Others	All
1983	4.5	2.3	6.1	8.1	4.4
1987	5.1	2.0	8.2	7.3	4.9
1993	6.5	3.1	9.8	7.6	6.3
1999	7.8	4.0	10.9	10.1	7.6
20041	9.2	4.2	10.9	12.8	8.7

Note: Non-SC/ST combines OBC and others. OBC was not distinguished before 1999 data.

FIGURE 4

Educational Attainment by Expenditure Quintile (Age 25-34)



	1	2	3	4	5	All
1983	0.7	1.2	2.5	4.9	11.7	4.4
1993	1.0	2.1	4.2	7.1	16.4	6.3
2004	1.5	3.3	5.6	10.1	23.0	8.7

Figure 4 presents the EAR by expenditure quintile.[11] The attainment increases with the quintile. This is the standard for two reasons: (i) attainment of tertiary education generally implies a higher salary, which raises the income of the household, and (ii)

NSS data do not have information on income. Per capita monthly consumption expenditure is used as proxy for income. Rural and urban quintiles are generated separately, and combined to get all India quintile. So quintile 1 represents bottom 20 percent of the population irrespective of area.

already affluent households are more likely to enroll in tertiary education, as shown in the next sub-section, and attainment therefore increases with income. Nevertheless, there is a large gap in the attainment rate of the top 20 percent of the population and the bottom 20 percent of the population. In addition, attainment for the top two quintiles of the population has increased substantially compared with the other quintiles.

Figure 5 presents the EAR for the major states.[12] Attainment has improved in most of the states over time; however, there exist large differences across states. Assam, Bihar and Jammu & Kashmir not only have low attainment rates, but also attainment has not improved significantly during the past decade. Most other states experienced a substantial increase in attainment over the past decade.

FIGURE 5
Educational Attainment in Major States

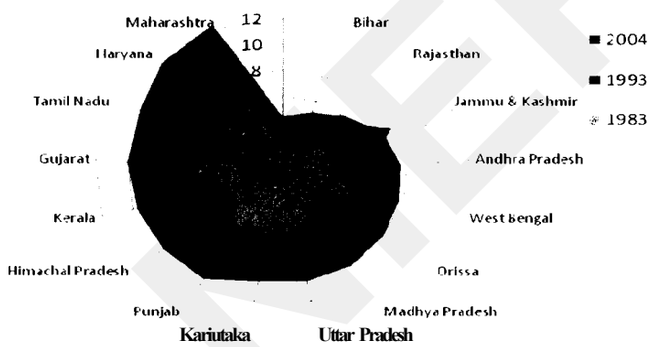
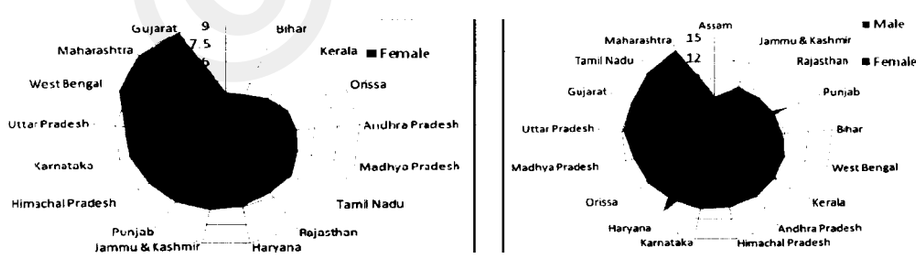


FIGURE 6
Gender Difference in Educational Attainment in Major States



[12] The EAR for all states is given in Annex I Table 2.

Figure 6 presents the attainment of tertiary education by gender in the major states of India in 1983 and 2004, respectively. In 1983, female attainment was below male attainment for all states. The gender gap was large; male attainment was 167 percent higher than female attainment at the national level. By 2004, female attainment had increased markedly, and the gender gap had been reduced to 67 percent. However, the gender gap in attainment of tertiary education remains significant. Importantly, attainment for females is higher than that of males in a few states, e.g., Kerala, Haryana, and Punjab.

It is expected that the gender gap will continue to decline as female enrolment in tertiary education continues to increase over and above that of males. This will in the future lead to a narrowing of the gender gap in attainment. This and other predictions regarding attainment can be deduced from the past and current enrolment patterns of tertiary education, which the next sub-section will describe.

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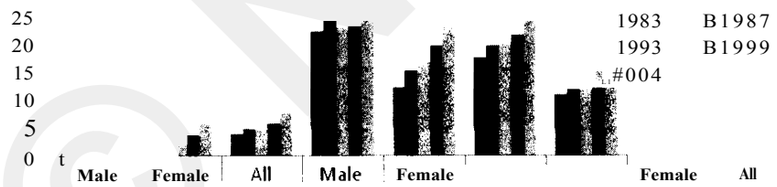
Gross Enrolment Ratio

FIGURE 7
G E R by Gender and Sector



	Rural			Urban			All		
	Male	Female	All	Male	Female			Female	All
1983	6.1	1.8	3.9	22.4	12.4	17.7	10.8	4.5	7.6
1987	7.3	2.3	4.8	24.2	15.2	20.0	11.8	5.4	8.6
1993	7.2	2.0	4.7	23.1	16.9	20.2	11.7	5.9	8.9
1999	7.5	3.6	5.6	23.3	20.0	21.7	12.1	8.0	10.1
2004	9.7	5.7	7.7	26.8	23.4	25.2	14.8	10.4	12.6

Figure 7 presents the GER in tertiary education in India by gender and sector. There has been considerable progress in the GER, especially for females in both urban and rural areas. Female enrolment increased by 131 percent from 1983 to 2004, compared with 37 percent for males. The ratios of GER for different groups (e.g., the ratio of the GER for females to the GER for males) are given in Annex I Table 4. Enrolment in rural areas

increased faster than enrolment in urban areas (97 percent compared with 42 percent). Nevertheless, enrolment in rural areas still remains only 30 percent that of enrolment in urban areas. Given that 72 percent of India's population resides in rural areas, a large effort in rural areas is needed to increase the overall GER significantly.

FIGURE 8
GER in Major States

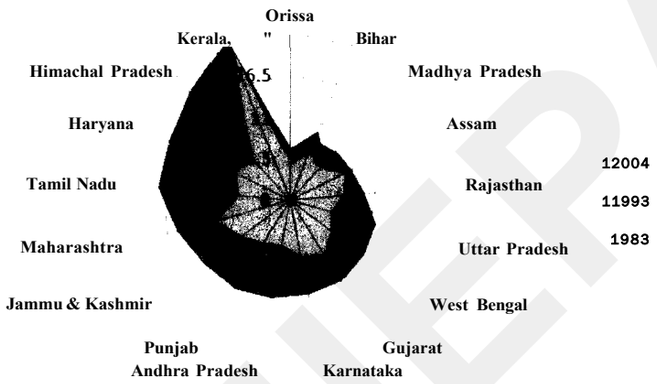
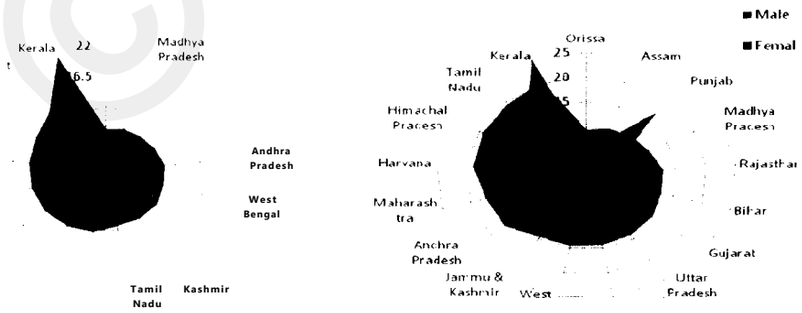


Figure 8 presents the GER for the major states.[13] Most of the states have seen improvement in enrolment over time; however, the rate of improvement differs significantly across states. As a result, there is a wide variation in enrolment between states in 2004, e.g., GER in Orissa and Bihar was less than half of GER in Kerala.

FIGURE 9
Gender-Wise Difference in GER in Major States



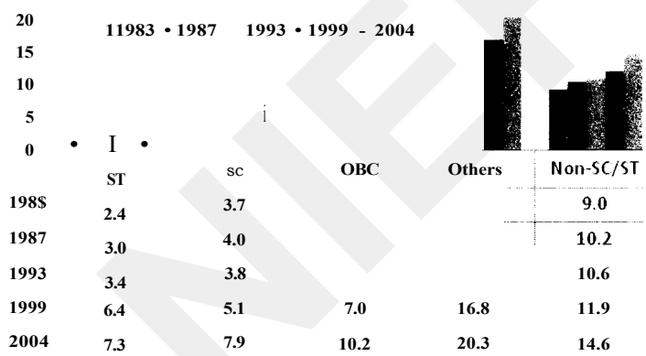
1983 **2004**

[13] The GER for all states is given in Annex I, Table 3.

Figure 9 presents enrolment in tertiary education in the major states in 1983 and in 2004. In 1983, a considerable gender gap existed in GER in almost all the states, except Kerala. By 2004, the gender gap in GER had been reduced in most of the states. In a few states, e.g., Kerala and Punjab, female GER exceeded that of males.

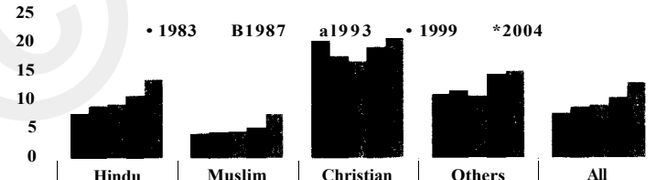
Figures 10 and 11 present the GER for social and religious groups, respectively. The GER for the SCs/STs has improved over time, but still the GER for these two disadvantaged groups is only half the GER for non-SCs/STs. The gap in the GER becomes much larger once we compare SCs/STs with "Others" (mostly higher castes in India). The OBCs have higher enrolment than the SCs/STs, but it is lower than that for "Others." The GER for Muslims is also below the national GER.

FIGURE 10
G E R for Different Social Groups



	ST	SC	OBC	Others	Non-SC/ST
198$	2.4	3.7			9.0
1987	3.0	4.0			10.2
1993	3.4	3.8			10.6
1999	6.4	5.1	7.0	16.8	11.9
2004	7.3	7.9	10.2	20.3	14.6

FIGURE 11
G E R for Different Religions

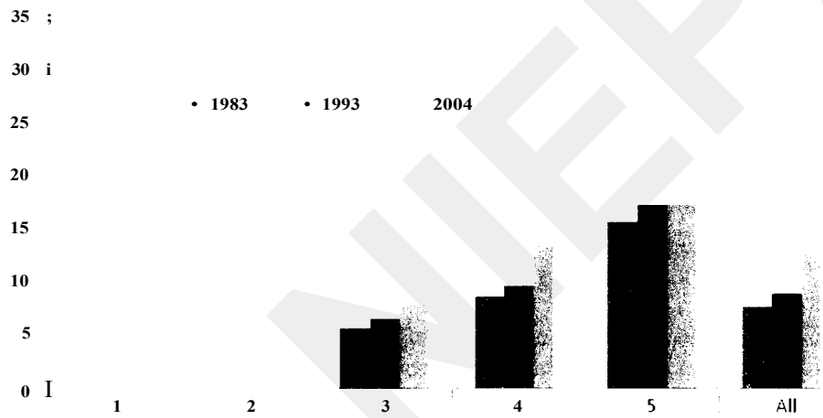


	Hindu	Muslim	Christian	Others	All
1983	7.5	4.1	20.0	10.6	7.6
1987	8.8	4.4	17.0	11.4	8.6
1993	9.1	4.6	16.2	10.5	8.9
1999	10.4	5.2	18.6	14.0	10.1
2004	13.2	7.6	20.8	14.7	12.7

Note: Non-SC/ST combines OBC and Others. OBC was not distinguished before 1999 in the data.

Figure 12 presents the GER by expenditure quintile. The difference in GER between the top and bottom quintiles was 13.6 percentage points in 1983; it increased to 27.1 percentage points in 2004. The GER for the upper two quintiles is increasing over time. However, the GER for the lowest three quintiles increased only marginally during the observed two decades. Two basic factors lie behind this noticeable trend: (i) the income distribution of the pool of graduates for secondary education, and (ii) the transition rate from secondary education to tertiary composition of youth from different income quintiles. To further examine the potential reasons behind the enrolment patterns described in this sub-section, the next sub-section presents the transition rates.

FIGURE 12
G E R by Expenditure Quintile



	1	2	3	4	5	All
1983	1.9	3.4	5.7	8.6	15.5	7.6
1993	2.2	3.5	6.5	9.6	18.6	8.9
2004	2.0	4.5	7.8	13.6	29.1	12.7

Transition Rate

The transition rate measures the share of graduates of secondary education that continues to tertiary education for a specific population group. We calculate the transition rate as the share of 18 to 23 year-olds with a complete upper secondary education, that either attend or have completed tertiary education. It is hence an indication of whether differences in enrolment at the tertiary education level are primarily caused by shortcomings at the primary and secondary education levels or by shortcomings in the transition between secondary and tertiary education. Note that this interpretation is a simplification, since the decision on whether to enroll in tertiary education (transition from secondary education to tertiary education) also depends on the quality and other aspects of primary and secondary education.

Figure 13 presents the transition rates by gender and sector. In 2004, the transition rate from higher secondary to tertiary was 71.2 percent for all India. It was 79.8 percent in urban areas, and 62.6 percent in rural areas. There is not much difference in transition rates between the two genders.

FIGURE 13

Transition from Upper Secondary to Tertiary by Gender and Sector

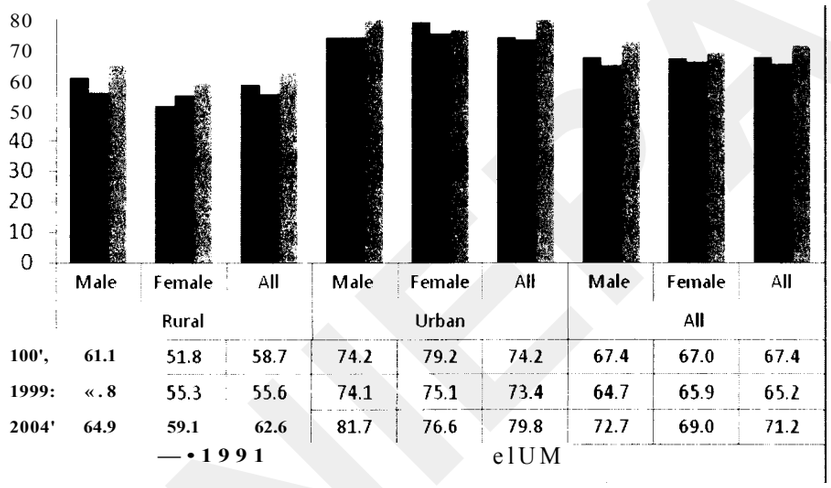


Figure 14 presents transition rates in major states.[14] The variation in transition rates between states is much lower than the variations observed in attainment and enrolment. This signals that state variations in enrolment are to a large extent caused by differences in the share of a cohort graduating from higher secondary education. Several states have nevertheless a lower transition rate; notably, Punjab, Rajasthan, Haryana, and Himachal Pradesh have a transition rate below 67 percent. In particular, several North-Eastern states seem to have low transition rates (Arunachal Pradesh, Manipur, Meghalaya, Tripura, and Assam, see Annex I). These states possess a greater potential to increase tertiary enrolment through focused efforts on increasing the transition from secondary education to tertiary education. Such efforts could include policies to increase the supply of seats through purely public, purely private, and/or public-private partnerships; policies to make available financing for qualified students; and/or targeted programs to raise aspirations among students and families for tertiary education. For other states, efforts to increase the pool of graduates of higher secondary education are more likely to increase enrolment in tertiary education. These are the states/UTs with a high transition rate - notably, Chandigarh, Delhi, West Bengal, Andhra Pradesh, Karnataka, Kerala, and Sikkim - where more than three-fourths of the graduates from secondary education continue to tertiary education.

[14] The transition rates for all the states are given in Annex I, Table 5.

FIGURE 14
Transition from Upper Secondary to Tertiary
(in Major States)

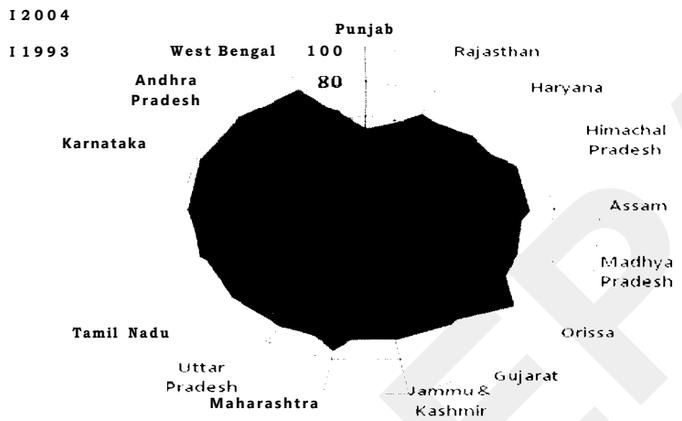
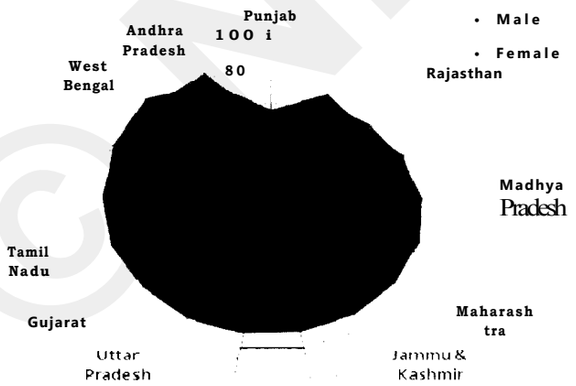


FIGURE 15
Transition from Upper Secondary to Tertiary
(by Sex in Major States, 2004)

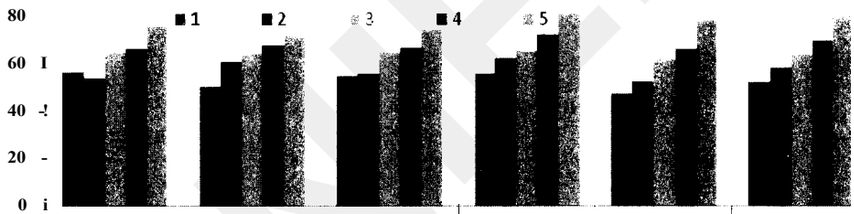


Youth from households in the top income distribution group are considerably more likely to transition from secondary education to tertiary education (Figure 16), In 2004, the transition rate for the bottom quintile was only 52 percent; for the top quintile, it was 79 percent. Importantly, the role of income in determining the transition rates of youth appears different than the other factors in two ways: (i) there is a large difference, 27 percentage points, from quintile 1 to quintile 5; and (ii) the difference has increased over

time (from 19 to 27 percentage points). Several factors could explain the increased importance of income. First, the quality of primary and secondary education attended by low-income households now differs more than before from schools attended by high-income families. Second, tertiary education has increasingly become fee-based, either through increases in the share of students attending self-financed/private colleges, as shown in the next sub-section, or through increased cost-recovery in public institutions. Without sufficient student financial aid, this could make tertiary education unaffordable for low-income families. Third, a larger share of youth from low-income families now graduates from secondary education. A higher proportion of this new and larger share may not aspire for tertiary education or may have less information regarding tertiary education. Therefore, less transition from secondary education to tertiary education. It is beyond the scope of this paper to investigate the extent to which these potential explanations drive the increased importance of income for transitioning to tertiary education.

FIGURE 16

Transition from Upper Secondary to Tertiary by Expenditure Quintile

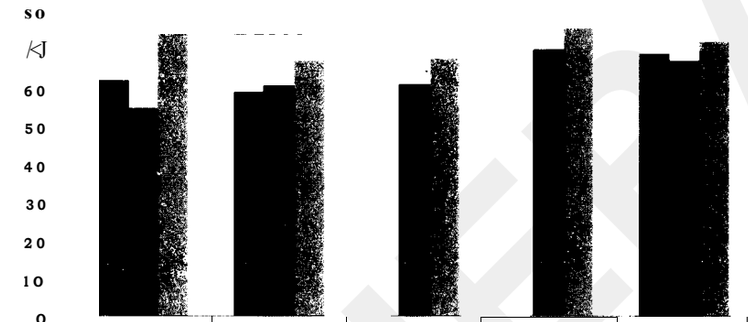


1993			2004		
55.8	50 0	54.0	55.0	46.9	51.9
53.3	S9.8	S5.3	61.4	S1.6	57.5
64.1	63.3	63.8	64.2	61.0	62.9
65.2	67.0	65.9	71.2	65.4	68.7
74.6	71.0	73.2	80.3	77.3	79.0

Figures 17 and 18 present transition rates for different social groups and religions, respectively. Compared with the attainment and enrolment rates, the difference in transition rates among social and religious groups is less pronounced. Notably, transition rates for disadvantaged groups - such as ST, SC, and OBC - have increased more rapidly than the national average. The rates for disadvantaged groups were relatively close to the national average in 2004. Actually, the transition rate for youth from ST background is above the national average (75 percent compared with 71.1 percent). This is an important fact to take into account when considering options to increase the enrolment of disadvantaged groups. The numbers suggest that the predominant reason for low enrolment in tertiary education of SC, ST, OBC, and Muslim youth is a lower propensity

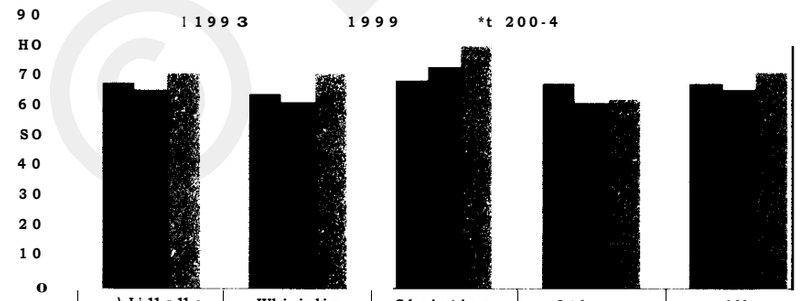
to complete secondary education. This will be further examined in Section 4, where a regression analysis will examine the probability of transitioning to tertiary education. The next sub-section will focus on the kind of tertiary education institution and stream of tertiary education in which students enroll.

FIGURE 17
Transition from Upper Secondary to Tertiary
(by Social Groups)



	ST	SC	OBC	Others	Non-SC/ST
1993	61.4	58.5			68.4
1999	54.0	60.2	60.5	69.3	66.5
2004	75.0	66.3	66.9	71.9	71.6

FIGURE 18
Transition from Upper Secondary to Tertiary
(by Religious Groups)



	Hindu	Muslim	Christian	Others	All
1993	67.7	63.9	68.3	67.4	67.4
1999	65.4	61.3	72.9	61.2	65.2
2004	71.3	70.7	79.8	62.5	71.1

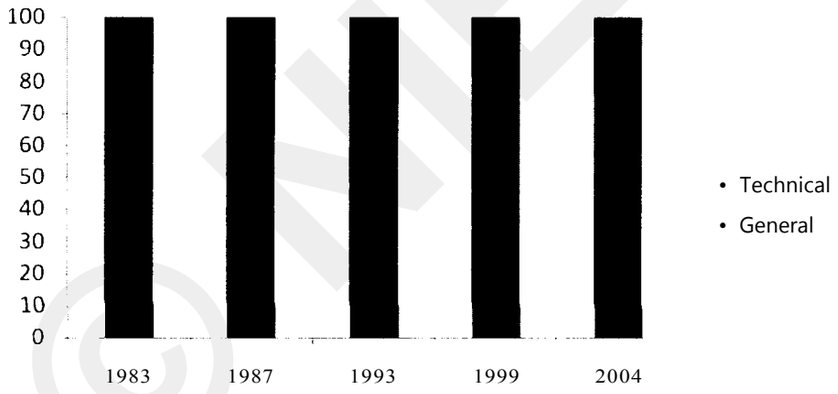
Note: Non-SC/ST combines OBC and Others. OBC was not distinguished in 1993 data.

Participation in Tertiary Education by Stream of Tertiary Education

To understand the basic trends in participation in tertiary education, it is not only important to know who participates, but also where they participate. The following two sub-sections briefly examine the second part of participation. This sub-section looks at participation by stream of tertiary education. Tertiary education consists of the General and Technical streams. Engineering is part of the Technical stream.

Approximately less than a quarter of tertiary education students attended technical courses, while more than three-quarters attended general courses in 2004 (Figure 19). The share of technical streams among tertiary attending students increased between 1999 and 2004 (Figure 19). Not only the number of students attending technical and engineering courses has shown a steady increase over time, but also the share of engineering courses in the technical stream is increasing over time (Figure 20).[15] It should be noted that the sample size of students in technical and engineering education is smaller than the general stream. Therefore, the margin of error an estimates for these groups of students is larger.

FIGURE 19
Distribution of Tertiary Attending Students



Note: Tertiary education consists of the General and Technical streams. Engineering is part of the Technical stream.

[15] The sudden jump in 1993 could be statistical error (data noise) and therefore may not reflect an actual increase. Therefore, a linear trend was added to the figures to show that the share of students attending technical (including engineering) stream seems to have steadily increased.

FIGURE 20
Number of Students Attending Engineering Courses

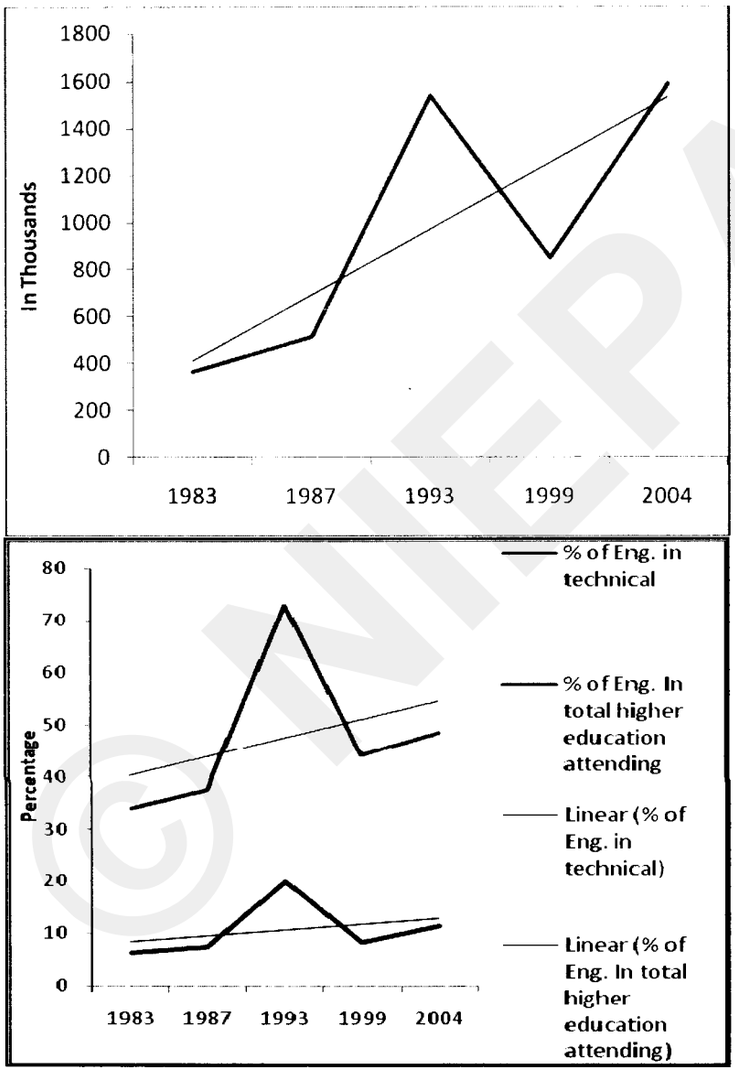
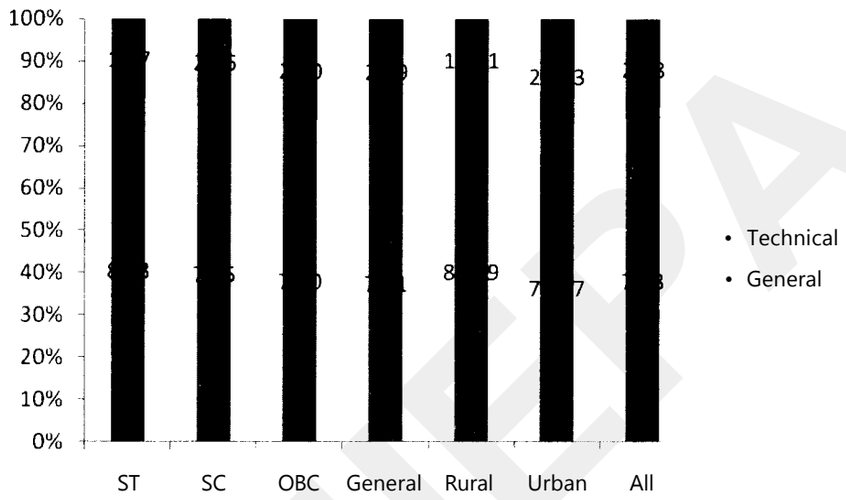


Figure 21 presents the shares of different streams among tertiary attending students by social groups and sector. The percentage of students attending the technical stream is higher for the general category compared with the SCs/STs; however, the difference in percentage attending the technical stream is not large between OBCs and the general category.

FIGURE 21
Distribution of Tertiary Attending Students for Different Social Groups/Sector in 2004



Note: Population share refers to percentage of 18-23 age-group individuals belonging to different quintiles. As quintiles divide the entire population into five groups based on the consumption expenditure, and the demographic profile (e.g., age-distribution) of each quintiles differs, individuals with ages between 18 and 23 years are not equally distributed across quintiles. The bottom 20 percent of the population has less number of members in 18-23 age-group, while top 20 percent of the population has largest number of members in age group 18-23.

Figure 22 presents the breakdown of students enrolled in different streams of tertiary education according to students' economic status. As the demographic profile of each quintile varies (e.g., poor families may have more members below 14 years of age), the number of persons belonging to age-group 18-23 also varies across quintiles. Only 16 percent of individuals in age-group 18-23 belong to the bottom 20 percent of the country, while 24 percent of individuals in age-group 18-23 belong to the top 20 percent of the country. Although the top expenditure quintile has a larger share in the 18-23 age-group population (24 percent), the share of students from the top quintile is even larger (55 percent). The share of students from the top quintile is particularly dominant in the engineering programs (73 percent). The lowest quintile has a marginal share in the total student body (2.4 percent) and especially in the technical and engineering streams (1.9 percent and 0.8 percent). This pattern could be explained by several factors: (i) engineering (and technical) education is considered prestigious and attractive because of high returns. Therefore, competition for entry is stronger, which could result in a higher share coming from affluent families; (ii) a higher share of engineering (and technical)

education is self-financed, as shown later in this section. Therefore, less well-off families could have difficulties paying the tuition fees. Further, the self-financed colleges are predominantly located in Southern states and in urban areas, where income is higher. In addition, the self-financed and private aided colleges are not necessarily subject to the same regulations regarding reservations for SC and ST students.

FIGURE 22
Break-Up of Tertiary Attending Students, 2004

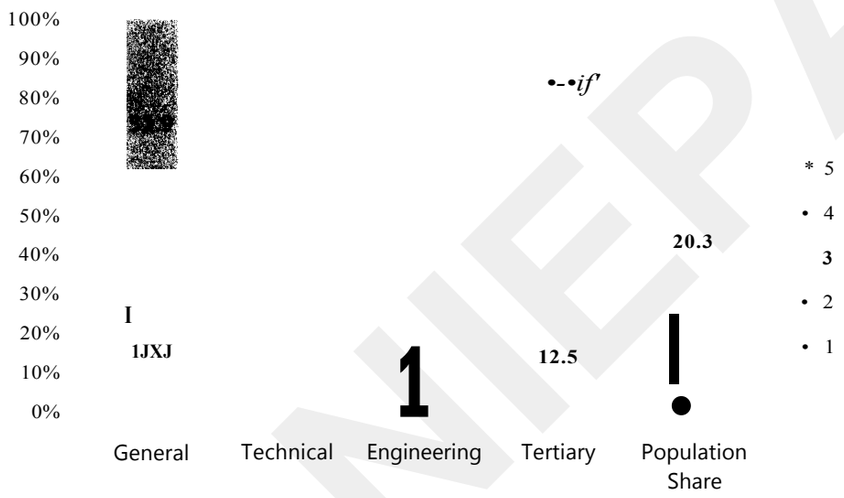
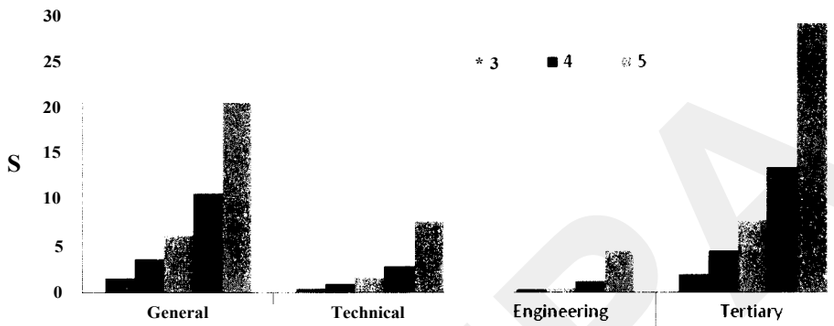


Figure 23 presents the enrolment ratio by expenditure quintile and tertiary education stream. As expected, there is wide variation in the enrolment ratio across expenditure quintiles, and the variation is larger in technical/engineering courses. Access to technical/engineering courses is very low for students belonging to lower expenditure quintiles.

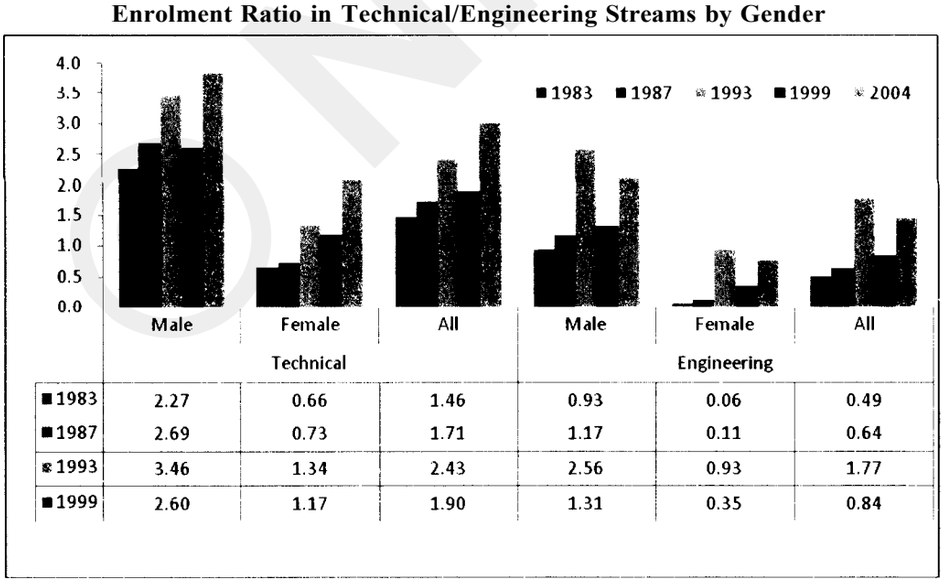
Given the increasing importance of technical education in tertiary education, we now explore how equitable the access to technical or engineering education is. Figure 24 presents the enrolment ratio in technical and engineering courses by gender. Although the enrolment ratio has improved for both the genders, female enrolment is lagging far behind male enrolment. As has been the case with tertiary education enrolment, in the technical/engineering stream, female enrolment is lower than male enrolment. However, it is worth noting that the female enrolment ratio in technical education and engineering seemingly increased dramatically from 1983 to 2004, around 4 times for technical education and 10 times for engineering education. Some contributory factors, among others, could be: (i) the general increase in participation among women, and (ii) the advent of "softer" engineering programs, in particular IT-programs.

FIGURE 23
Enrolment Ratio by Quintile in Different Streams, 2004



	General	Technical	Engineering	Tertiary
• 1	1.60	0.36	0.07	1.96
• 2	3.63	0.89	0.23	4.52
3	6.17	1.61	0.37	7.78
• 4	10.77	2.82	1.18	13.60
–•5	21.38	7.69	4.48	29.07

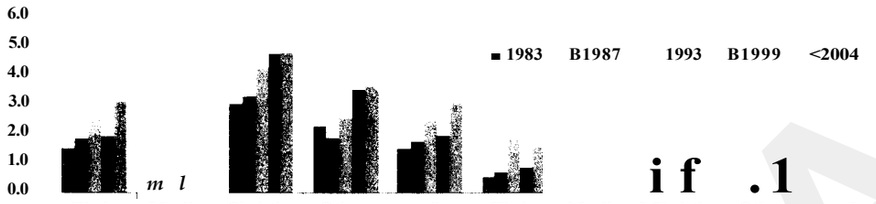
FIGURE 24
Enrolment Ratio in Technical/Engineering Streams by Gender



	Technical			Engineering		
	Male	Female	All	Male	Female	All
■1983	2.27	0.66	1.46	0.93	0.06	0.49
■1987	2.69	0.73	1.71	1.17	0.11	0.64
1993	3.46	1.34	2.43	2.56	0.93	1.77
■1999	2.60	1.17	1.90	1.31	0.35	0.84

FIGURE 25

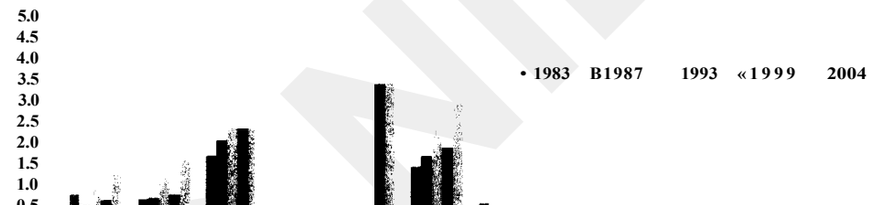
Enrolment Ratio in Technical/Engineering Streams by Religion



	Technical					Engineering				
	Hindu	Muslim	Christian	Others	All	Hindu	Muslim	Christian	Others	All
1983	1.46	0.90	2.98	2.23	1.46	0.51	0.17	1.21	0.61	0.49
1987	1.78	0.84	3.22	1.82	1.71	0.66	0.27	1.51	0.68	0.64
1993	2.50	1.52	4.20	2.50	2.43	1.80	1.12	3.31	1.90	1.77
1999	1.86	1.21	4.67	3.44	1.90	0.84	0.43	1.97	1.43	0.84
2004	3.11	1.83	5.58	3.56	3.00	1.53	0.68	2.84	1.93	1.46

FIGURE 26

Enrolment Ratio in Technical/Engineering Streams by Caste



	technical					Eng					
	ST	SC	Non-SC/ST	OBC	Others	All	ST	SC	Non-SC/ST	OBC	Others	All
1983	0.81	0.70	1.70			1.46	0.61	0.23	0.54			0.49
1987	0.52	0.72	2.07			1.71	0.26	0.25	0.77			0.64
1993	0.96	1.19	2.89			2.43	0.55	0.79	2.13			1.77
1999	0.67	0.81	2.35	1.31	3.36	1.90	0.11	0.39	1.05	0.61	1.48	0.84
2004	1.37	1.63	3.58	2.44	5.05	3.00	0.13	0.77	1.80	1.08	2.74	1.46

Note: Non-SC/ST combines OBC and Others. OBC was not distinguished before 1999 data.

Figures 25 and 26 present the enrolment ratio in technical and engineering courses by religion and caste, respectively. Enrolment in technical and engineering courses among Muslims, SCs, STs, and OBCs is below that of the general population. This seems particularly to be the case for ST students, where the enrolment ratio in engineering education is estimated to be 0.13 (compared with 1.46 for all India). There is a need to

confirm the low participation with estimates from other data sources. Further, the reasons behind this low participation should be investigated with an eye to design programs to increase the participation of SC, ST, and other disadvantaged groups in technical education, including engineering education. All financial, social, and educational reasons should be considered in such a study.

Participation by Type of Institution

This sub-section looks at another aspect of participation across types of tertiary education. There are four types of educational institutions that provide tertiary education in India: government institutions, local institutions, private aided institutions, and private unaided institutions.

Figure 27 presents the distribution of tertiary education students across types of institutions. More than half of tertiary-attending students attended the government institutes and a quarter attended private aided institutes in 2004. The share of private unaided institutions increased between 1995 and 2004, while the share of private aided institutions declined. The proportion of students in government institutions remained more or less stable. The increasing role of self-financed/private tertiary education is a global trend. This trend is seemingly driven by: (i) the inability of governments to increase public investment in tertiary education sufficiently to meet demand, (ii) a rapid increase in demand for tertiary education, making more students and families willing to pay for tertiary education; and (iii) greater political and regulatory acceptance of private tertiary education (World Bank, 2002). These drivers could equally explain the rise in private unaided institutions in India.

FIGURE 27
Distribution of Tertiary Attending Students by Institutes Types

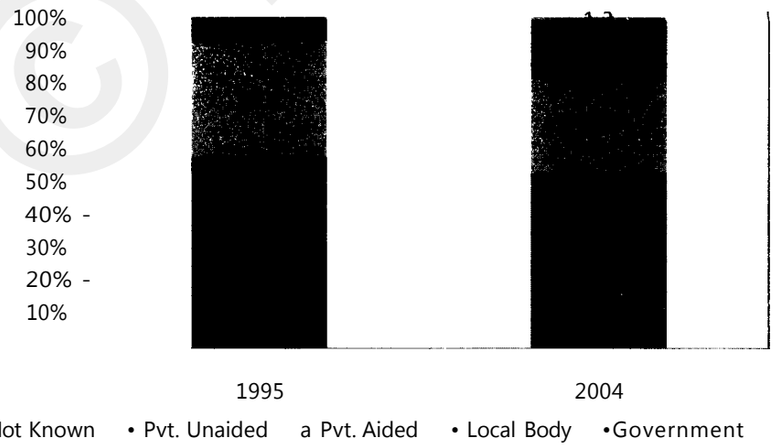


Figure 28 presents the distribution of students across different types of institutes by expenditure quintile. Unsurprisingly, the proportion of students attending private unaided institutes is larger in the higher quintiles, while the proportion of students attending government institutes is larger in lower quintiles. Among other factors, this pattern is likely to be the combined result of the inability of low-income families to finance high fees in private unaided institutions and the reservations in public institutions. Further, government institutions are generally more present in rural and low-income areas of India, thus increasing their enrolment among low-income students.

FIGURE 28
Distribution of Tertiary Attending Students by Type of Institutes by Expenditure Quintile in 2004

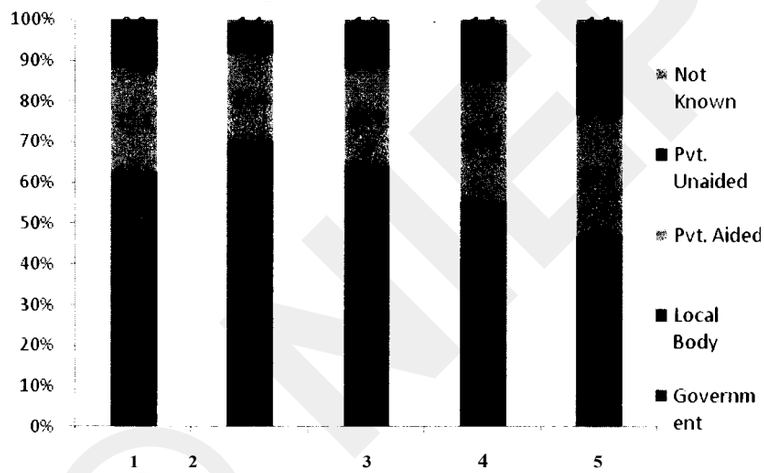
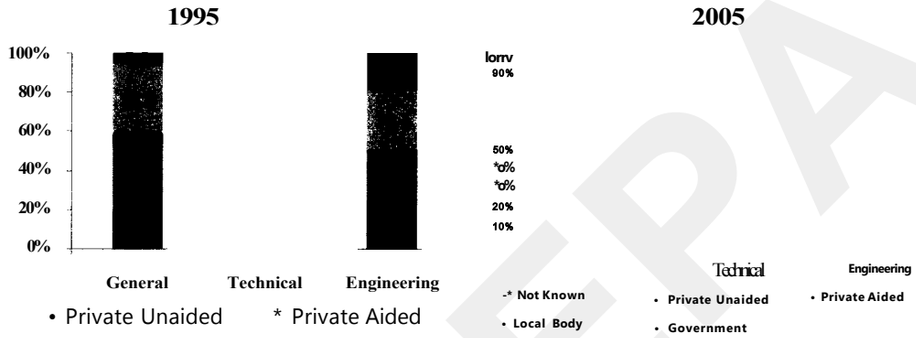


Figure 29 presents the type of institutions attended by students in different streams in tertiary education. Government institutions have the largest share in general and technical courses. While the share of government institutions remained similar for general courses between 1995 and 2004, it declined for technical courses (especially for engineering courses). The share of private unaided institutes increased between 1995 and 2004 in all streams. In 2004, the government was important education to less than a third of the students in engineering programs. Hence, it is no longer the majority provider or education, but rather a minority provider. This implies that the central and state government should increasingly be strategic as to which kind of minority provider they should be. In particular, the government could consider where in the system its limited public investment in engineering education should be oriented. Public investment could be oriented toward critical objectives that private institutions are not currently covering sufficiently. In other developing countries, such objectives have been: (i) equity in terms

of disadvantaged groups, low-income students, and under-served geographical regions, (li) research and development, including strategic masters and PhD programs; and (iii) disciplines considered a national priority, but with low labour market returns for the individual.

FIGURE 29

Share of Types of Institutes in Different Courses



Determinants of Access

In the previous sections, we have seen that there exist large gaps in attainment, enrolment, and transition rates between rural-urban areas, genders, expenditure quintiles, social groups, religions, and states. However, several of the characteristics are overlapping. For example, a higher share of the disadvantaged groups, such as SCs and STs, are the poor who live in rural areas. Therefore, it is difficult to know which overlapping factor is dominant. To disentangle these effects, we estimate a probit model.

Most of the explanatory variables considered are statistically significant at the 1 percent level. In general, the results confirm the descriptive statistics from the previous section. The estimations suggest that:

- *Income seems to be a decisive factor for participation in tertiary education. There is a strong positive association between expenditure quintile and participation in tertiary education. Income is strongly and statistically significantly associated with both completion of secondary education, and transitioning from secondary to tertiary education. Further, both coefficients increased from 1993 to 2004.*[16]
- *Rural youth is statistically associated with a strong negative impact on the probability of attending tertiary education.* This is as a result of both a negative impact from lower completion rates of secondary education and a lower probability of transitioning from secondary school to a tertiary education institution. This effect did not decrease from 1993 to 2004.

[16] The findings remain unaffected when we use per capita expenditure in place of quintiles (see Annex III, Table **3).**

- *An urban female was not statistically significantly less likely to attend tertiary education in 2004 compared with a male with the same characteristics.* This seems to be a combination of a higher likelihood of completing secondary education, but a lower tendency to transition to tertiary education.
- *Rural females are associated with a significantly lower propensity to attend tertiary education, but this decreased between 1993 and 2004. The* lower probability of completing secondary education compared with their urban peers seems to account for the difference. Rural women appeared to be as likely to transition to tertiary education from secondary school in 2004 (this was not the case in 1993).
- *The under-participation of Scheduled Castes is seemingly mostly driven by a lower completion rate of secondary education among SCs (and other overlapping factors, such as poverty).* There is no statistically significant lower transition rate for SCs. Importantly, this may (or may not) be a result of the positive discrimination from the reservation policies.
- *The under-participation of Scheduled Tribes is equally driven by the smaller share of graduates of secondary education (and other overlapping factors, such as poverty).* In fact, compared with the general population, an ST student is statistically 41 percent more likely to enroll in tertiary education than a peer with the same observable characteristics. This effect was not present in 1993. Again, this may (or may not) be a result of the positive discrimination from the reservation policies.
- *The under-participation of Muslims also appears to be caused by lower completion rates of secondary education (and other overlapping factors, such as poverty).* There was no statistically significant effect in 2004 on the probability of transition to tertiary education (a small effect was statistically significant in 1993).

The results in Table 1 suggest that the marginal impact of economic status seems most important in determining participation in tertiary education and its importance has increased during the past decade.

The importance of social groups, religion, and gender has decreased during the same period. The expansion of primary and secondary education to these groups is highly likely to have contributed substantially to the decline in importance. However, there are still important gaps in participation for these groups. The results indicate that the primary distortions continuing the unequal representation in tertiary education lie mostly at the lower rungs of the education ladder. Therefore, the continued inequality of completion of primary and secondary education is perpetuated in much lower and more unequal access to tertiary education. Equitable expansion of secondary education is therefore a cornerstone in a policy to increase equal access to tertiary education.

TABLE 1

Determinants of Tertiary Education Access for Age Group 18-23

Population Segment	*Attending or Completed Tertiary*		*Attending or Completed Tertiary Conditional on Completed Higher*		*At least Completed Higher Secondary*	
	2004	*1993*	*2004*	*1993*	*2004*	*1993*
SC*	-0.205***	-0.403***	0.052	-0.103	-0.248***	-0.413***
ST*	0.008	-0.371***	0.407***	-0.089	-0.151**	-0.391***
Muslim*	-0.364***	-0.533***	-0.033	-0.157*	-0.406***	-0.548***
Female*	0.057	-0.019	-0.138*	0.016	0.110***	-0.029
Rural*	-0.780***	-0.755***	-0.593***	-0.420***	-0.650***	-0.686***
Female*Rural*	-0.328***	-0.547***	-0.089	-0.331***	-0.346***	-0.517***
Quintile 2*	0.332***	0.227***	0.177	0.005	0.294***	0.232***
Quintile 3*	0.644***	0.530***	0.346***	0.221**	0.585***	0.485***
Quintile 4*	0.955***	0.759***	0.518***	0.278***	0.860***	0.716***
Quintile 5*	1.565***	1.214***	0.957***	0.572***	1.394***	1.128***
Number of Observations	68,894	65,722	14,956	11,699	68,894	65,722

Notes: (1) * p<0.05; ** p<0.01; * pO.001**

(2) The coefficients are marginal effects.

(3) * denotes dummy variable and marginal impact is for discrete change of dummy variable from 0 to 1.

(4) Non-SC/ST is the social group of reference.

(5) The model also includes state dummies (full results in Annex III)

Table 2 presents the determinants of access to technical/engineering courses conditional on completion of higher secondary education and attending tertiary education.[17] Again, the regression results confirm the descriptive statistics from Section 3. The general, but rough, interpretation is that once a student is attending tertiary education, the demographic factors do not matter for choice of stream. However, there are four caveats to this result: (i) students belonging to the top quintile have a higher probability of taking technical/engineering courses, and this tendency has increased over time; (ii) female students are less likely to attend technical/engineering courses; (iii) youth in rural areas are less likely, and strongly so, to enroll in technical/engineering courses, an effect that intensified between 1993 and 2004; and (iv) ST students have statistically significantly lower probability to attend engineering courses.

[17] **Annex III, Table 2 presents the complete model.**

TABLE 2
Determinants of Technical/Engineering Access for Age Group 18-23

	Attending or Completed Technical Education Conditional on				*Attending or Completed Engineering Conditional on*			
	Completed Higher Secondary		*Attending or Completed Tertiary*		*Completed Higher Secondary*		*Attending or Completed Tertiary*	
	2004	1993	2004	1993	2004	1993	2004	1993
sc*	0.037	0.161*	0.015	0.218*	0.044	0.102	0.023	0.138
ST*	0.116	0.169	0.013	0.211	-0.490***	0.038	-0.591***	0.044
Muslim*	0.013	0.087	0.028	0.159	-0.041	0.101	-0.027	0.173
Female	-0.295***	-0.385***	-0.285***	-0.437***	-0.482***	-0.411***	-0.477***	-0.462***
Rural	-0.458***	-0.371***	-0.317***	-0.264***	-0.689***	-0.360***	-0.579***	-0.261***
Female* Rural	-0.066	0.071	-0.067	0.183	-0.127	0.079	-0.152	0.192
Quintile 2*	-0.051	0.114	-0.138	0.156	-0.109	0.013	-0.194	0.037
Quintile 3*	0.18	0.099	0.056	0.044	0.023	0.077	-0.103	0.023
Quintile 4*	0.158	0.157	-0.035	0.093	0.267	0.085	0.093	0.018
Quintile 5*	0.561***	0.388***	0.293*	0.248*	0.794***	0.279**	0.583**	0.133
Number of Observations	14,953	11,699	10,274	8,018	14,785	11,699	10,177	8,018

Notes: **(1) * p<0.05; ** p<0.01; ***p<0.001**
(2) The coefficients are marginal effects.
(3) * denote dummy variable and marginal impact is for discrete change of dummy variable from 0 to 1.
(4) Non-SC/ST is the social group of reference.
(5) The model also includes state dummies (full results in Annex III).

Conclusion

This paper has reviewed participation in tertiary education in India from 1983 to 2004 by computing the attainment, enrolment, and transition rates from secondary education by population groups. It is motivated by a need to establish a consensus on the basic trends in participation and contribute to more fact-driven and targeted policy making for tertiary education.

The findings show that Indian tertiary education progressed significantly between 1983 and 2004, Attainment of tertiary education in the age-group 25-34 doubled from 4.4 percent in 1983 to 8.8 percent in 2004. Enrolment increased by 5 percentage points, from 7.6 to 12.6 (a 60 percent increase).

Nevertheless, there exist large gaps in enrolment between:

- *Rich and poor households.* In 2004, a young person from the top expenditure quintile was 14.5 times more likely to enroll in tertiary education than a young person from the bottom quintile. This is a considerable increase from 8 times in 1983.
- *Rural and urban areas.* Rural youth were 3.2 times less likely to attend tertiary education compared with their urban peers. This gap had been narrowing over time (from 4.5 times in 1983).

- *Disadvantaged groups (SCs, STs, OBCs, and Muslims) and the general population.* For example, the non-SC/ST population is 1.9 times more likely to attend tertiary than an ST student. The gap halved from 3.8 times in 1983.
- *Women and men.* In 2004, males were 1.4 times more likely to enroll than females. This gap has been reduced from 2.4 times in 1983.
- *Between states.* For instance, a youngster from Maharashtra is 1.7 times more likely to attend tertiary education than a peer from Madhya Pradesh.

Overall, the (relative) gaps in enrolment remain sizable, but they have diminished over time, with the notable exception of the gap between rich and poor, which has widened substantially.

To start narrowing down on the specific bottlenecks, the paper analyzed transition rates from secondary education to tertiary education and estimated regressions explaining who enrolls in tertiary education. The results suggest the following:

- *The enrolment gap between rich and poor stems both from a lower probability of completing secondary education, and from a substantially lower chance of transition from secondary education to tertiary education. Further, the importance of income in this transition seems to have strengthened over time.* The transition rate among young people from the poorest expenditure quintile was 52 percent in 2004 (compared with 54 percent in 1983), while the transition rate in the richest quintile was 79 percent (compared with 71 percent in 1983). The regression results confirm the importance of household income as a key factor for entry in tertiary education, even after controlling for completion of secondary education.
- *Rural youth have both a lower chance of completing secondary education and a lower chance of transitioning from secondary education to tertiary education.* This is even more pronounced for rural females.
- *The gaps in transition rate between genders, between social groups, and between religious communities are much smaller than the gaps observed in enrolment.* This indicates that completion of secondary education remains the main barrier to tertiary education for these groups.
- *The primary distortions creating unequal representation in tertiary education for SC, ST, OBC, and Muslim youth seemingly lie mostly at the lower rungs of the education ladder.* Only economic status, gender, and rural residence remain statistically significant for the transition from secondary school to tertiary education. Hence, for SCs, STs, OBCs, and Muslims, the gaps in enrolment in tertiary education are statistically explained by the difference in completion rates of higher secondary education.
- *Transition rates differ less between states than enrolment rates.* This indicates that completion of secondary education is a fundamental factor behind the state differences in enrolment in tertiary education. In certain states/UTs, notably Chandigarh, Delhi, West Bengal, and Andhra Pradesh, the transition rate exceeds 80 percent, indicating that expansion of tertiary

education will predominantly require expansion in the share of the cohort that completes higher secondary education. In contrast, the transition rate in the states of Arunachal Pradesh, Manipur, Meghalaya, and Mizoram is below 60 percent, signifying that a large proportion of seemingly qualified youngsters exit the education system in the transition from secondary to tertiary education.

Lastly, we examined whether participation in the technical education stream and in particular engineering courses, differed frpm general participation in tertiary education. The enrolment inequalities between income groups, rural-urban residence, and gender are larger in the technical stream, and especially so for the engineering courses. We speculate that this may be a result of fierce competition to enter the engineering field and the higher share of private, self-financed education in engineering. Government institutions educated around 30 percent of the student body in 2004, compared with 49 percent in 1995. Importantly, the gender gap in the engineering field has been narrowing. The female enrolment ratio in engineering courses increased ten-fold from 1983 to 2004.

The policy challenge for India is to expand tertiary education, while at the same time making it more inclusive. This is not likely to happen by itself; it will require targeted and focused polices to help disadvantaged youth qualify for, enroll in, and complete tertiary education.

An equitable expansion of secondary education is necessary for fundamental improvement in equity in tertiary education; in particular for low-income families, girls, Muslims, disadvantaged groups (SCs, STs, and OBCs), and rural areas.

There is a clear need to improve the transition to tertiary education for students belonging to low and middle-income families, and thus bring more low and middle-income students to universities and colleges. The inequality of participation in tertiary education risks jeopardizing a more inclusive Indian society. There is a need to better understand why and how family income translates to unequal access. Such an analysis should encompass consideration of financial, social, academic, and information obstacles to tertiary education. A major reason is expected to be lack of financing to sustain another four years of investment in education in terms of foregone income, living costs, and education costs. The policy implication of such a finding would be to scale up financial assistance to low and middle-income families through education loan programs, and perhaps a highly targeted scholarship program exclusively for poor families.

Lack of information regarding tertiary education, low expectations of attending tertiary education, and inadequate preparation are equally expected to be behind the unequal access to tertiary education. This could be a barrier for young women, in particular those from rural and disadvantaged communities. Therefore, compensatory programs could assist poor families and young women in overcoming these barriers.

In addition, the gap in enrolment and transition into tertiary education for rural youth requires special attention and initiatives. Again, more analysis is called for. A key driver could be a shortage of seats in rural areas, which is likely to require smart expansion of public, private, or public-private partnerships. Alternative policy implications could be

greater relevance of tertiary education for the rural labour market and industry, and probably also increased quality of primary and secondary education in rural schools.

India has tremendous potential to make tertiary education an engine for equal social and economic progress, but it requires concerted and targeted efforts based on facts.

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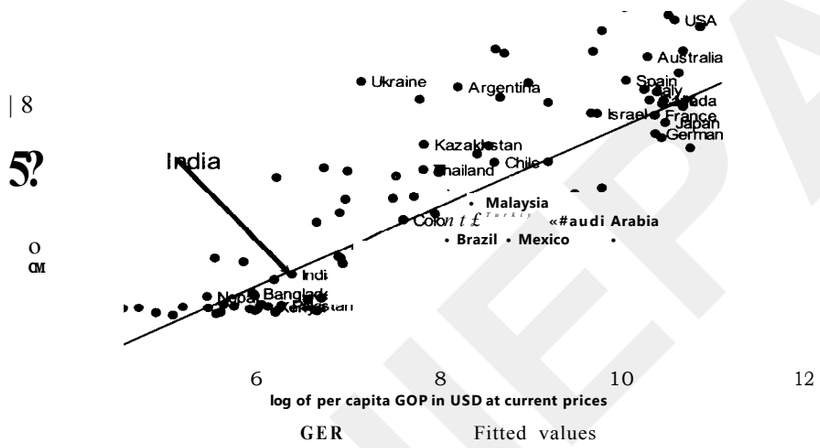
Appendix

FIGURE **A-1**
GER in Tertiary Education in Different Countries, 2004



Source: World Bank's Educational Statistics for GER and International Monetary Fund for per capita GDP.

TABLE A-1
GER in Different Levels of Education in India

Year	*Primary*	*Middle*	*Secondary*	*Tertiary*
1983	49.2	50.6	34.4	7.6
1987	53.0	56.8	38.4	8.6
1993	69.0	71.6	50.6	8.9
1999	75.1	77.9	50.2	10.1
2004	101.5	85.4	60.0	12.6

TABLE A-2
Educational Attainment Rate in India for Age-Group 25-34 (%)

Year	*Primary*	*Middle*	...	*wxmm**
1983	38.6	25.3	14.0	4.4
1987	39.0	25.6	14.9	4.9
1993	43.6	31.5	19.0	6.3
1999	49.5	38.5	23.8	7.6
2004	56.7	43.6	26.9	8.7

Annex I

TABLE A-3

Age-Distribution of Students Currently Attending Higher Education

	1993		*1999*		*2004*	
Age	***%of Attending***	***Cumulative %***	***%of Attending***	***Cumulative %***	***%Of Attending***	***Cumulative %***
Less than 18	7.76	7.76	5.66	5.66	7.56	7.56
18	17.27	25.02	16.46	22.12	17.46	25.02
19	14.57	39.59	14.37	36.49	16.9	41.92
20	18.29	57.88	20.13	56.62	20.34	62.25
21	11.5	69.38	12.02	68.64	11.9	74.15
22	12.15	81.53	11.53	80.17	10.25	84.41
23	6.12	87.65	5.85	86.03	5.27	89.67
24	3.71	91.36	5.22	91.25	4.07	93.74
25	3.68	95.04	3.87	95.12	2.68	96.43
More than 25	4.96	100	4.88	100	3.57	100

TABLE A-4

Educational Attainment in Different States

	1983			*1993*			*2004*		
State	***Male***	***Female***	***All***	***Male***	***Female***	***All***	***Male***	***Female***	***All***
Andhra Pradesh	**4.8**	**1.1**	**3.0**	**8.0**	**2.8**	**5.3**	**10.1**	**5.5**	*1.1*
Arunachal Pradesh	**19.7**	**4.0**	**12.7**	**3.8**	**2.0**	**2.9**	**9.0**	**3.5**	**6.1**
Assam	**3.5**	**0.8**	**2.2**	**5.9**	**2.4**	**4.1**	**6.3**	**2.8**	**4.4**
Bihar	**3.6**	**0.5**	**2.0**	**8.1**	**1.4**	**4.6**	**8.7**	**2.0**	**5.1**
							(7.9)	**(1.2)**	**(4.2)**
Jharkhand	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**10.7**	**4.7**	**7.7**
Goa				**10.2**	**9.9**	**10.1**	**13.8**	**18.8**	**16.4**
Gujarat	**9.0**	**3.9**	**6.5**	**11.7**	**4.8**	**8.3**	**12.0**	**7.8**	**10.0**
Haryana	**5.9**	**2.7**	**4.4**	**8.5**	**3.4**	**5.9**	**10.6**	**12.6**	**11.6**
Himachal Pradesh	**6.6**	**2.0**	**4.1**	**7.6**	**4.4**	**5.8**	**10.3**	**9.0**	**9.6**
Jammu&									
Kashmir	**6.2**	**2.6**	**4.4**	**8.6**	**7.2**	**7.8**	**8.3**	**6.2**	**7.2**
Karnataka	**6.8**	**2.5**	**4.7**	**9.0**	**3.9**	**6.4**	**10.5**	**6.4**	**8.5**
Kerala	**4.1**	**3.7**	**3.9**	**8.6**	**4.7**	**6.5**	**9.5**	**9.9**	**9.7**
Madhya Pradesh	**5.0**	**1.6**	**3.3**	**6.4**	**3.2**	**4.8**	**10.9**	**6.0**	**8.4**
							(10.9)	**(6.4)**	**(8.6)**
Chhattisgarh	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**11.0**	**4.7**	**7.7**
Maharashtra	**8.8**	**3.5**	**6.2**	**11.2**	**5.6**	**8.4**	**14.1**	**10.7**	**12.4**
Manipur	**4.4**	**1.3**	**2.8**	**15.6**	**10.4**	**12.9**	**13.3**	**8.8**	**10.8**
Meghalaya	**3.8**	**3.9**	**3.9**	**2.9**	**3.1**	**3.0**	**4.6**	**8.1**	**6.5**
Mizoram	**3.0**	**0.9**	**2.0**	**4.5**	**2.4**	**3.4**	**7.9**	**3.9**	**5.8**
Nagaland	**7.5**	**3.5**	**6.3**	**10.6**	**4.4**	**7.4**	**16.6**	**8.7**	**12.3**
Orissa	**4.6**	**0.8**	**2.7**	**5.8**	**2.3**	**4.0**	**10.8**	**5.6**	**8.1**
Punjab	**6.5**	**4.5**	**5.5**	**6.8**	**6.3**	**6.6**	**8.4**	**10.7**	**9.6**
Rajasthan	**5.5**	**0.8**	**3.2**	**8.3**	**2.7**	**5.5**	**8.3**	**3.8**	**6.0**
Sikkim	**4.2**	**2.5**	**3.3**	**6.2**	**1.9**	**4.4**	**5.8**	**4.5**	**5.1**
Tamil Nadu	**5.5**	**2.0**	**3.8**	**8.6**	**3.9**	**6.3**	**13.0**	**8.0**	**10.3**
Tripura	**11.0**	**2.1**	**6.7**	**9.9**	**4.1**	**6.9**	**6.9**	**4.8**	**5.8**
Uttar Pradesh	**7.0**	**2.2**	**4.6**	**9.3**	**3.7**	**6.4**	**11.8**	**5.3**	**8.5**
							(11.6)	**(4.9)**	**(8.1)**
Uttarakhand	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**17.2**	**13.0**	**15.0**
West Bengal	**8.1**	**4.2**	**6.2**	**8.3**	**3.8**	**6.0**	**9.4**	**6.3**	**7.8**
Chandigarh	**28.2**	**23.7**	**26.1**	**24.5**	**23.8**	**24.2**	**23.5**	**26.8**	**25.2**
Delhi	**22.0**	**19.4**	**20.9**	**21.7**	**24.5**	**22.9**	**24.5**	**21.8**	**23.3**
INDIA	**6.4**	**2.4**	**4.4**	**8.8**	**3.8**	**6.3**	**11.0**	**6.6**	**8.7**

Note: The figures in parenthesis refer to new boundary (carved out state is excluded from parental state). The states of Jharkhand, Chhattisgarh, and Uttarakhand were carved out from Bihar, Madhya Pradesh, and Uttar Pradesh, respectively in 2000.

TABLE A-5

G E R in Different States

	1983			*1993*			*2004*		
	Male	***Female***	***All***	***Male***	***Female***	***All***	***Male***	***Female***	***All***
Andhra Pradesh	9.3	***2.9***	6.0	9.4	3.6	6.5	17.0	9.8	13.3
Arunachal Pradesh	16.2	0.0	9.2	6.4	3.4	4.8	4.1	3.5	3.8
Assam	12.3	3.5	7.9	11.1	6.6	9.1	10.3	7.4	8.9
Bihar	11.8	2.0	6.8	15.3	4.1	9.9	13.0	4.1	8.6
							(13.4)	(2.8)	(8.2)
Jharkhand	NA	NA	NA	NA	NA	NA	12.0	7.4	9.7
Goa				18.2	17.9	18.1	17.7	15.3	16.4
Gujarat	12.5	3.8	8.3	12.4	8.7	10.7	13.8	11.5	12.7
Haryana	12.3	3.4	8.0	12.9	5.2	9.4	19.0	16.0	17.6
Himachal Pradesh	12.3	3.4	7.3	9.8	6.8	8.3	19.3	19.6	19.5
Jammu& Kashmir	10.2	5.6	7.9	9.9	6.8	8.4	14.6	13.3	14.0
Karnataka	10.1	4.8	7.4	12.7	4.7	8.9	14.2	11.3	12.8
Kerala	21.5	20.9	21.2	15.1	13.3	14.2	20.3	25.3	22.9
Madhya Pradesh	7.7	3.6	5.7	9.6	3.7	6.7	11.6	5.7	8.8
							(11.3)	(5.3)	(8.4)
Chhattisgarh	NA	NA	NA	NA	NA	NA	12.5	7.1	10.0
Maharashtra	13.5	6.9	10.2	16.2	8.5	12.5	17.4	12.8	15.3
Manipur	7.9	4.1	6.0	30.7	15.9	23.1	18.3	10.9	14.6
Meghalaya	5.7	1.9	3.6	4.7	2.8	3.6	4.4	5.4	4.9
Mizoram	5.3	2.6	3.9	9.0	5.9	7.5	9.7	8.4	9.1
Nagaland	12.7	0.0	7.5	16.0	12.9	14.7	27.6	16.7	22.0
Orissa	7.2	2.5	4.7	9.9	4.2	7.0	9.4	5.0	7.0
Punjab	8.0	4.8	6.5	6.8	8.4	7.5	10.9	17.5	14.0
Rajasthan	11.3	2.3	6.9	9.1	4.2	6.8	12.9	6.2	9.7
Sikkim	0.4	13	0.8	5.4	3.1	4.3	6.1	7.1	6.5
Tamil Nadu	10.2	3.8	6.9	11.8	6.8	9.2	19.6	15.1	17.3
Tripura	13.8	3.3	8.5	9.4	5.3	7.4	6.5	4.6	5.5
Uttar Pradesh	8.5	2.1	5.4	10.0	4.7	7.5	14.0	9.1	11.7
							(13.9)	(8.5)	(11.3)
Uttarakhand	NA	NA	NA	NA	NA	NA	16.1	19.5	17.8
West Bengal	9.5	3.6	. 6.6	9.3	4.0	6.7	14.4	9.7	12.0
Chandigarh	46.3	21.8	37.1	47.0	47.3	47.1	54.3	44.3	49.8
Delhi	24.8	25.9	25.3	20.5	22.8	21.5	24.4	36.6	29.0
INDIA	**10.8**	**4.5**	**7.6**	**11.7**	**5.9**	**8.9**	**14.8**	**10**.4	**12.6**

Note: The entries in parenthesis refer to new boundary (carved out state is excluded from parental state). The states of Jharkhand, Chhattisgarh, and Uttarakhand were carved out from Bihar, Madhya Pradesh, and Uttar Pradesh, respectively in 2000.

TABLE A-6

Ratio of G E R

	Female/Male			*Rural/ Urban*	*sa Non-SC &ST*	*ST/ Non-SC &ST*	*Muslim/ "m a"*	*Quintilel/ QuintileS*	*Quintile2/ QuintileS*
	Rural	*Urban*	*All India*						
1983	0.29	0.55	0.41	0.36	0.41	0.27	0.54	0.12	0.22
1987	0.32	0.63	0.46	0.41	0.39	0.29	0.50		
1993	0.28	0.73	0.50	0.40	0.36	0.32	0.50	0.12	0.19
1999	0.48	0.86	0.66	0.46	0.43	0.54	0.50		
2004	0.59	0.87	0.70	0.52	0.55	0.50	0.57	0.07	0.16

TABLE A-7

Transition Rate in Different States

	1993			*1999*			*2004*		
	Male	***Female***	***All***	***Male***	***Female***	***All***	***Male***	***Female***	***All***
Andhra Pradesh	69.8	66.9	68.8	69.1	71.9	70.3	82.8	76.7	80.3
Arunachal Pradesh	44.8	54.4	49.2	40.3	17.6	34.1	17.2	25.3	20.5
Assam	66.0	79.1	70.0	72.4	61.6	67.6	64.9	69.9	66.9
Bihar	74.0	70.5	73.3	61.2	62.0	61.4	72.2	70.1	71.7
							(73.4)	(68.2)	(72.4)
Jharkhand	NA	NA	NA	NA	NA	NA	68.2	72.3	69.8
Goa	84.5	64.6	74.2	68.4	73.4	71.2	59.9	63.0	61.7
Gujarat	67.1	65.1	66.2	57.8	69.4	63.1	73.8	62.3	68.2
Haryana	60.2	61.9	60.7	53.5	65.2	58.5	69.3	62.8	66.4
Himachal Pradesh	67.8	78.9	71.8	56.4	61.6	59.0	65.4	67.3	66.4
J & K	55.6	54.7	55.2	60.2	66.8	62.7	70.5	64.9	68.2
Karnataka	74.2	66.4	71.6	58.0	58.5	58.2	78.7	79.6	79.2
Kerala	79.7	69.8	74.2	71.5	77.3	75.1	77.3	75.7	76.3
Madhya Pradesh	55.8	62.9	57.9	51.0	72.8	60.4	68.0	65.7	67.1
							(70.5)	(63.7)	(67.9)
Chhattisgarh	NA	NA	NA	NA	NA	NA	61.3	72.3	64.9
Maharashtra	74.8	74.6	74.7	71.3	65.8	69.1	69.9	67.4	68.9
Manipur	72.4	68.9	70.9	39.1	52.1	44.9	60.9	53.8	57.8
Meghalaya	89.5	51.2	70.4	72.7	84.5	78.2	41.3	47.0	44.3
Mizoram	82.0	87.1	84.1	56.8	59.4	58.1	65.5	43.6	54.1
Nagaland	34.2	65.0	43.6	61.1	57.6	59.4	78.8	59.8	70.0
Orissa	78.6	78.8	78.7	73.0	65.4	70.1	70.9	62.5	67.5
Punjab	40.9	59.8	50.3	49.3	57.1	53.2	49.5	56.4	53.5
Rajasthan	62.2	74.5	65.8	63.0	70.4	65.8	65.4	62.3	64.4
Sikkim	60.3	48.2	54.3	89.1	53.1	75.9	76.4	81.5	78.7
Tamil Nadu	60.2	53.3	57.2	67.0	55.8	61.4	75.7	67.2	71.3
Tripura	67.5	68.3	67.8	57.2	42.4	49.7	64.6	67.0	65.6
Uttar Pradesh	61.4	61.8	61.5	71.8	61.0	67.3	73.0	64.9	69.6
	..						(73.1)	(64.7)	(69.6)
Uttarakhand	NA	NA	NA	NA	NA	NA	72.1	67.2	69.5
West Bengal	83.3	76.9	80.9	66.7	71.6	68.4	79.1	84.7	81.5
Chandigarh	41.9	62.0	52.5	67.4	71.7	69.4	90.2	80.6	85.8
Delhi	66.2	73.9	70.5	55.9	77.7	65.7	86.1	79.9	83.3
INDIA	67.4	67.**0**	67.4	64.**7**	**65.9**	**65.2**	**72.7**	**69.0**	71.**2**

Note: The entries in parenthesis refer to new boundary (carved out state is excluded from parental state). The states of Jharkhand, Chhattisgarh, and Uttarakhand were carved out from Bihar, Madhya Pradesh, and Uttar Pradesh, respectively in 2000.

Annex II

Educational Attainment for Age Group 15-64

TABLE A-8
Education Attainment Rate by Sector/Gender (15-64)

	Rural			*Urban*			*All India*		
	Male	***Female***	***All***	***Male***	***Female***	***All***	***Male***	***Female***	***All***
1983	1.6	0.4	1.0	9.7	4.8	7.4	3.7	1.4	2.6
1987	2.1	0.5	1.3	11.2	6.3	8.9	4.3	1.8	3.1
1993	2.8	0.6	1.7	13.7	8.3	11.2	5.7	2.5	4.2
1999	3.5	1.0	2.3	16.0	10.7	13.5	7.0	3.6	5.3
2004	4.0	1.4	2.7	16.4	12.2	14.4	7.5	4.2	5.9

TABLE A-9
Education Attainment Rate by Social Group (15-64)

	ST	***SC***	***Non-SC/ST****	***OBC***	***Others***	***All***
1983	0.55	0.60	3.27			2.60
1987	0.86	0.85	3.91			3.12
1993	0.98	1.11	5.29			4.18
1999	1.91	1.97	6.63	2.96	10.20	5.32
2004	1.94	2.38	7.29	3.83	11.67	5.91

Note: Non-SC/ST combines OBC and Others. OBC was not distinguished before 1999 data.

TABLE A-10
Education Attainment Rate by Religion (15-64)

	Hindu	***Muslim***	***Christian***	***Others***	***All***
1983	2.6	1.4	3.9	4.4	2.6
1987	3.2	1.3	5.1	4.5	3.1
1993	4.3	2.0	6.1	5.7	4.2
1999	5.5	2.6	7.9	7.3	5.3
2004	6.2	3.0	7.7	8.8	5.9

TABLE A-11

Education Attainment Rate by Consumption Quintile (15-64)

	1	2	3	4	5	**All**
1983	0.47	0.80	1.47	2.75	6.58	2.59
1993	0.64	1.21	2.38	4.32	10.74	4.17
2004	0.89	1.91	3.37	6.16	14.63	5.91

TABLE A-12

Education Attainment Rate in Major States (15-64)

	1983	1987	1993	1999	2004
Andhra Pradesh	1.8	2.1	3.1	5.1	5.0
Assam	1.4	3.0	2.6	3.5	3.2
Bihar	1.4	2.0	3.2	4.0	3.7
Delhi	15.0	17.6	21.4	21.5	20.9
Gujarat	3.6	3.3	4.7	5.4	6.4
Haryana	2.4	3.4	4.6	5.1	7.5
Himachal Pradesh	2.4	1.9	3.5	4.5	5.8
Jammu & Kashmir	2.6	3.3	4.6	4.5	4.5
Karnataka	2.5	2.5	4.1	5.2	5.6
Kerala	2.5	3.7	4.4	5.4	6.3
Madhya Pradesh	2.3	3.0	3.2	4.2	5.4
Maharashtra	3.3	3.9	5.5	6.7	7.7
Orissa	1.4	1.8	2.4	3.3	4.5
Punjab	3.1	3.8	4.6	5.4	6.9
Rajasthan	1.9	2.6	3.5	4.4	4.7
Tamil Nadu	2.1	2.8	3.9	5.6	6.9
Tripura	3.7	3.9	3.8	3.7	4.0
Uttar Pradesh	2.7	3.2	4.2	5.3	5.7
West Bengal	3.5	3.8	4.9	5.6	6.0
AU India	**2.6**	**3.1**	**4.2**	**5.3**	**5.9**

Annex III

TABLE A-13

Determinants of Higher Education Access for Age-Group 18-23, 2004

	ffl		*(2)*		*(3)*	
	Attending or Completed Tertiary		***Attending or Completed Tertiary Conditional on Completed Higher Secondary***		***At Least Completed Higher Secondary***	
	2004	***1993***	***2004***	***1993***	***2004***	***1993***
SC*	**-0.205*** **	**-0.403*** **	**0.052**	**-0.103**	**-0.248*** **	**-0.413*** **
ST*	**0.008**	**-0.371*** **	**0.407*** **	**-0.089**	**-0.151** **	**-0.391*** **
Muslim*	**-0.364*** **	**-0.533*** **	**-0.033**	**-0.157***	**-0.406*** **	**-0.548*** **
Female*	**0.057**	**-0.019**	**-0.138***	**0.016**	**0.110*** **	**-0.029**
Rural*	**-0.780*** **	**-0.755*** **	**-0.593*** **	**-0.420*** **	**-0.650*** **	**-0.686*** **
Fern rural*	**-0.328*** **	**-0.547*** **	**-0.089**	**-0.331*** **	**-0.346*** **	**-0.517*** **
Quintile 2*	**0.332*** **	**0.227*** **	**0.177**	**0.005**	**0.294*** **	**0.232*** **
Quintile 3*	**0.644*** **	**0.530*** **	**0.346*** **	**0.221** **	**0.585*** **	**0.485*** **
Quintile 4*	**0.955*** **	**0.759*** **	**0.518*** **	**0.278*** **	**0.860*** **	**0.716*** **
Quintile 5*	**1.565*** **	**1.214*** **	**0.957*** **	**0.572*** **	**1.394*** **	**1.128*** **
Arunachal Pradesh*	**-0.792*** **	**-0.353** **	**-1.818*** **	**-0.486***	**-0.224**	**0.335**
Assam *	**-0.091**	**0.416*** **	**-0.335** **	**0.319** **	**-0.305**	**0.946*** **
Bihar *	**0.006**	**0.522*** **	**-0.135**	**0.339*** **	**-0.294**	**1.014*** **
Goa*	**-0.038**	**0.142**	**-0.537***	**0.271**	**-0.113**	**0.684** **
Gujarat*	**-0.218** **	**0.194** **	**-0.443*** **	**-0.026**	**-0.399**	**0.804*** **
Haryana*	**-0.121**	**-0.021**	**-0.502*** **	**-0.247**	**-0.248**	**0.624** **
Himachal Pradesh*	**0.107**	**0.159***	**-0.380** **	**0.17**	**-0.049**	**0.679** **
Jammu & Kashmir*	**-0.08**	**-0.051**	**-0.350** **	**-0.415** **	**-0.268**	**0.683** **
Kamataka*	**-0.005**	**0.159** **	**-0.026**	**0.091**	**-0.315**	**0.706** **
Kerala*	**0.226*** **	**0.412*** **	**-0.02**	**0.293** **	**-0.036**	**0.942*** **
Madhya Pradesh*	**-0.057**	**0.097***	**-0.331*** **	**-0.278*** **	**-0.267**	**0.773*** **
Maharashtra*	**-0.068**	**0.172*** **	**-0.389*** **	**0.109**	**-0.212**	**0.724** **
Manipur*	**-0.188***	**0.489*** **	**-0.604*** **	**0.225**	**-0.279**	**1.013*** **
Meghalaya*	**-1.159*** **	**-0.173**	**-1.542*** **	**0.052**	**-1.056*** **	**0.341**
Mizoram*	**-0.846*** **	**-0.078**	**-1.364*** **	**0.445***	**-0.764*** **	**0.344**
Nagaland*	**-0.273** **	**0.252***	**-0.850*** **	**-0.627*** **	**-0.299**	**1.185*** **
Orissa*	**0.154***	**0.386*** **	**-0.13**	**0.498*** **	**-0.109**	**0.837*** **
Punjab *	**-0.293*** **	**-0.184*** **	**-0.860*** **	**-0.546*** **	**-0.247**	**0.604** **
Rajasthan*	**-0.278*** **	**-0.071**	**-0.480*** **	**-0.105**	**-0.459***	**0.506***
Sikkim *	**-0.634*** **	**-0.097**	**-0.264**	**-0.184**	**-0.933*** **	**0.510***
Tamil Nadu*	**0.052**	**0.07**	**-0.266** **	**-0.284** **	**-0.126**	**0.796*** **
Tripura*	**-0.176**	**0.044**	**-0.29**	**0.057**	**-0.405**	**0.572***
Uttar Pradesh*	**0.09**	**0.213*** **	**-0.169**	**-0.093**	**-0.157**	**0.850*** **
West Bengal*	**-0.015**	**0.137** **	**-0.004**	**0.381*** **	**-0.358**	**0.590** **
Delhi *	**-0.141**	**0.051**	**-0.307***	**-0.297***	**-0.36**	**0.748** **
Constant	**-1.371*** **	**-1.506*** **	**0.577*** **	**0.360*** **	**-0.840*** **	**-1.790*** **
N	**68894**	**65722**	**14956**	**11699**	**68894**	**65722**

Notes: (l)*p<0.05; ** pO.OT; ***p<0.001

(2) The coefficients are marginal effects.

(3) * Denote dummy variable, and marginal impact is for discrete change of dummy variable from 0 to 1.

(4) Non-SC/ST is excluded social group.

(5) The model also includes state dummies.

TABLE A-14

Determinants of Access to Technical/Engineering Courses for Age Group 18-23, 2004

	Attending or Completed Technical Education Conditional on				*Attending or Completed Engineering Conditional on*			
	Completed Higher Secondary		*Attending or Completed Tertiary*		*Completed Higher Secondary*		*Attending or Completed Tertiary*	
	2004	*1993*	*2004*	*1993*	*2004*	*1993*	*2004*	*1993*
sc*	**0.037**	**0.161***	**0.015**	**0.218***	**0.044**	**0.102**	**0.023**	**0.138**
ST*	**0.116**	**0.169**	**0.013**	**0.211**	**-0.490*****	**0.038**	**-0.591*****	**0.044**
Muslim*	**0.013**	**0.087**	**0.028**	**0.159**	**-0.041**	**0.101**	**-0.027**	**0.173**
Female*	**-0.295*****	**-0.385*****	**-0.285*****	**-0.437*****	**-0.482*****	**-0.411*****	**-0.477*****	**-0.462*****
Rural*	**-0.458*****	**-0.371*****	**-0.317*****	**-0.264*****	**-0.689*****	**-0.360*****	**-0.579*****	**-0.261*****
fem rural*	**-0.066**	**0.071**	**-0.067**	**0.183**	**-0.127**	**0.079**	**-0.152**	**0.192**
Quintile 2*	**-0.051**	**0.114**	**-0.138**	**0.156**	**-0.109**	**0.013**	**-0.194**	**0.037**
Quintile 3*	**0.18**	**0.099**	**0.056**	**0.044**	**0.023**	**0.077**	**-0.103**	**0.023**
Quintile 4*	**0.158**	**0.157**	**-0.035**	**0.093**	**0.267**	**0.085**	**0.093**	**0.018**
Quintile 5*	**0.561*****	**0.388*****	**0.293***	**0.248***	**0.794*****	**0.279****	**0.583****	**0.133**
Arunachal Pradesh*	**-0.425**	**0.249**	**0.535**	**0.556**	**-0.837***	**-0.026**	**-0.277**	**0.182**
Assam *	**-0.217**	**0.055**	**-0.167**	**-0.012**	**-1.591*****	**-0.172**	**-1.630*****	**-0.25**
Bihar*	**-0.509*****	**0.289****	**-0.539*****	**0.215***	**-1.102*****	**-0.137**	**-1.134*****	**-0.252***
Goa *	**0.329**	**-0.24**	**0.595***	**-0.34**	**0.553***	**-0.118**	**0.814****	**-0.202**
Gujarat*	**-0.256***	**-0.304***	**-0.154**	**-0.312***	**-0.177**	**-0.355****	**-0.076**	**-0.365***
Haryana*	**-0.381***	**-0.208**	**-0.299**	**-0.144**	**-0.216**	**-0.664*****	**-0.148**	**-0.647****
Himachal Pradesh*	**-0.379****	**0.191**	**-0.318***	**0.177**	**-0.814*****	**0.211**	**-0.774*****	**0.204**
Jammu& Kashmir*	**-0.222**	**0.01**	**-0.156**	**0.216**	**-0.624*****	**-0.371**	**-0.607****	**-0.264**
Karnataka*	**0.186**	**0.048**	**0.219**	**0.036**	**0.093**	**-0.022**	**0.117**	**-0.041**
Kerala*	**0.119**	**0.077**	**0.129**	**0.004**	**0.298***	**0.054**	**0.323***	**-0.015**
Madhya Pradesh*	**-0.235**	**0.083**	**-0.181**	**0.226***	**-0.252**	**0.033**	**-0.212**	**0.161**
Maharashtra*	**-0.033**	**0.011**	**0.064**	**-0.003**	**-0.085**	**-0.026**	**-0.017**	**-0.038**
Manipur*	**-0.086**	**0.577*****	**0.092**	**0.604*****	**-0.769****	**0.569*****	**-0.714****	**0.589*****
Meghalaya*	**-0.653***	**-0.929*****	**-0.224**	**-1.018*****		**-0.727****		**-0.793****
Mizoram*	**-0.823****	**0.677****	**-0.543**	**0.651****	**-0.319**	**0.513***	**-0.093**	**0.486**
Nagaland*	**-0.424**	**-0.015**	**-0.247**	**0.417**	**-0.251**	**-0.804****	**-0.113**	**-0.583**
Orissa*	**-0.062**	**0.167**	**-0.044**	**0.045**	**0.05**	**0.041**	**0.067**	**-0.079**
Punjab *	**-0.550*****	**-0.234***	**-0.350****	**-0.008**	**-0.786*****	**-0.270***	**-0.657*****	**-0.058**
Rajasthan*	**-0.079**	**0.188**	**0.041**	**0.270***	**-0.508****	**0.187**	**-0.458***	**0.267***
Sikkim*	**-1.386****	**0.896****	**-1.380****	**1.359*****		**0.133**		**0.258**
Tamil Nadu*	**0.202**	**-0.186**	**0.299****	**-0.095**	**0.362****	**-0.148**	**0.439*****	**-0.051**
Tripura*	**0.05**	**0.528****	**0.13**	**0.613****	**-0.235**	**0.077**	**-0.208**	**0.1**
Uttar Pradesh*	**-0.195**	**-0.043**	**-0.184**	**-0.009**	**-0.522*****	**-0.071**	**-0.522*****	**-0.042**
West Bengal*	**-0.108**	**0.008**	**-0.116**	**-0.08**	**-0.266**	**0.011**	**-0.267**	**-0.069**
Delhi *	**-0.536****	**0.174**	**-0.491****	**0.321***	**-0.593*****	**0.241**	**-0.557****	**0.394****
Constant	**-0.929*****	**-1.125*****	**-0.625*****	**-0.848*****	**-1.278*****	**-1.144*****	**-1.023*****	**-0.873*****
N	**14953**	**11699**	**10274**	**8018**	**14785**	**11699**	**10177**	**8018**

Notes: (1) * p<0.05; ** p<0.01; *** pO.OOl. (2) The coefficients are marginal effects.
(3) * denote dummy variable and marginal impact is for discrete change of dummy variable from 0 to 1. (4) Non-SC/ST is excluded social group.

TABLE A-15

Determinants of Tertiary Education Access for Age Group 18-23

	Attending or Completed Tertiary		***Attending or Completed Tertiary Conditional on Completed Higher Secondary***		***At Least Completed Higher Secondary***	
	2004	***1993***	***2004***	***1993***	***2004***	***1993***
SC*	-0.174***	-0.407***	0.064	-0.099	-0.220***	-0.416***
ST*	0.018	-0.376***	0.413***	-0.094	-0.140**	-0.397***
Muslim*	-0.331***	-0.541***	-0.018	-0.160*	-0.375***	-0.554***
Female*	0.068*	-0.021	-0.133*	0.013	0.124***	-0.03
Rural*	-0.154***	-0.397***	-0.207***	-0.233***	-0.084**	-0.354***
female*Rural*	-0.337***	.0.544***	-0.088	-0.322***	-0.358***	-0.513***
Log per Capita Expenditure	1.057***	0.771***	0.650***	0.410***	0.980***	0.730***
Number of Observations	68,894	65,719	14,956	11,699	65,719	65,719

Notes: **(1)** * p<0.05; ** p<0.01; *** p<0.001

(2) The coefficients are marginal effects.

(3) * Denote dummy variable and marginal impact is for discrete change of dummy variable from 0 to 1.

(4) Non-SC/ST is the social group of reference.

(5) The model also includes state dummies (not shown in this table).

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Poverty and Student Dropout in Orissa[#]

Tarujyoti Buragohain*

Abstract

Poverty and student dropout are like two sides of the same coin and need to be addressed together if the Millennium Development Goals are to be realised by 2015. The Orissa Primary Education Programme Authority (OPEPA) had conducted a household survey in the month of October 2005, in which all households were covered and information related to 0-14-year-old children was gathered. The survey revealed that 93,008 boys and 94,854 girls dropped out from school in the age-group of 6-14 years. About 17 percent among boys and an equal percentage of girls reported 'poverty' as the reason for dropout from schools. Hence, more than one-third of the students dropout due to poverty. The survey also estimated that about 78 percent of students dropped out from Class I-V. About 15 and 17 percent of students dropped out from Class I and 11, respectively, before learning something useful. These groups of children will add to the level of illiteracy in the state in the future. According to the 2001 census, about 49 percent females and 24 percent males were illiterate in the state. About 30 percent of dropout students also cited domestic work the reasons for dropout. The National Council of Applied Economic Research (NCAER) conducted a survey in April-June 2006 to evaluate the reasons for dropout at the secondary level. About 1125 dropout students from the secondary level were interviewed to ascertain the reasons for dropout from schools. About 11 percent of these students gave the reason for dropping out to be the need to learn technical work as the current system of secondary education did not ensure any job, whereas about 18 percent reported that they needed to help in the family business. Household activities, which include looking after the young and the old, are among the important reasons cited by about 30 percent of dropout students.

A multivariate model has been developed to explore the reasons for dropout at the elementary level. The regression results suggest that the dropout at the primary level is highly correlated with poverty, illiteracy, and high percentage of population belonging to SC/ST categories in Orissa.

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Introduction

Universal primary education and reduction of extreme poverty to half by 2015 are two major goals in the Millennium Development Agenda. Universal primary education implies that every child aged 6-11 years, irrespective of caste, religion, and gender, should enrol in school and have schooling for a minimum of five years. During the five years of primary education, the child should achieve a minimum level of learning to achieve the goal of 'education for life'. As per the national guidelines, the state aims at providing access to primary school within one kilometre and to upper primary school within three kilometres from habitations having a population of 300 or more and 500 or more, respectively. Hence, the number of primary schools increased from 42,824 in 2001-2 to 45,700 in 2004-5. The enrolment in schools at the primary level also increased from 4769 thousand in the 2001-2 to 5215 thousand in 2004-5. However, a significant percentage of children continue to dropout of school due to socio-economic and cultural factors. The dropout rate in primary and upper primary schools in Orissa is significantly high as compared to the all-India average. The dropout rate at the primary level in Orissa increased among boys from 38.91 percent in 2001-2 to 41.2 percent in 2003-4, whereas the dropout rate declined from 38.36 percent to 33.7 percent during the same period in India. However, the dropout rate among girls declined by 7 percentage points from 40.08 percent in 2001-2 to 34.4 percent in 2003-4 in Orissa, whereas, it declined by 10 percentage points from 39.88 percent to 28.6 percent during the same period in India. In the case of upper primary level schools, the dropout rate among boys increased from 61.53 percent in 2001-2 to 64.6 percent in 2003-04 in Orissa, while it declined from 52.91 percent to 51.85 percent during the same period for all India. In the case of girls, the dropout rate declined by 2 percentage points decline of 4 percentage points. High dropout rates among boys both at the primary and upper primary levels in the state for deeper research into the problem therein. The decline in the dropout rate among girls may be attributed to the such schemes as the National Programme for Education of Girls at Elementary Level or Dakar Declaration (UNESCO 2000) etc. The problem of dropout becomes severe when children dropout from Classes I-III.

TABLE 1
Dropout at Elementary Level in Orissa (%)

Region	*2001-2*				*2003-4*			
	J-V		*I-VIII*		*I-V*		*J-VIII*	
	Boys	**Girls**	**Boys**	**Girls**	**Boys**	**Girls**	**Boys**	**Girls**
Orissa	**38.91**	**40.08**	**61.53**	**59.55**	**41.2**	**34.4**	**64.6**	**57.5**
India	**38.36**	**39.88**	**52.91**	**56.92**	**33.7**	**28.6**	**51.85**	**52.92**

Source: *Abstract of Selected Educational Statistics 2003-04,* **Ministry of Human Resource Development;** *Selected Educational Statistics 2001-02,* **Ministry of Human Resource Development.**

The dropout rate among both boys and girls at the elementary level is much higher among Scheduled Tribes (ST) in Orissa as compared to the national average, and needs urgent attention. Among STs is higher by about 10 percentage points than

to the all-India average at the elementary school level, whereas in the case of girls it higher by about 8 percentage points (Tables 1 and 2).

TABLE 2
Dropout among Scheduled Castes and Scheduled Tribes at Elementary Level in Orissa (%)

	Scheduled Caste (2002-3)				***Scheduled Tribes (2002-3)***			
	I-V		***I-VIII***		***I-V***		***I-nii***	
	Boys	***Girls***	***Boys***	***Girls***	***Boys***	***Girls***	***Boys***	***Girls***
Orissa	**37.87**	**34.68**	**66.55**	**72.34**	**58.03**	**53.50**	**77.45**	**79.12**
India	**41.13**	**41.91**	**58.24**	**62.19**	**50.82**	**52.10**	**66.86**	**71.17**

Source: Abstract of Selected Educational Statistics, 2002-03. **Ministry of Human Resource Development**

Nature of the Problem

Despite significant achievement in primary education in the state in terms of schools, teachers, and enrolment, there remain serious problems of dropout and wastage of school education. A significant proportion of children continue to dropout at the primary and upper primary levels, which need to be addressed to urgently in order to approach the goal of universal elementary education. A sizable proportion of dropout children cited reasons for their dropout as socio-economic and cultural factors, lack of female teacher, lack of infrastructure, and low quality education (Shariff, 1999; NCAER 1993-4). An earlier study also had confirmed that the school curriculum is not relevant to the day-to-day life (NCAER 2003). About 11 percent of students at the secondary and senior secondary level cited the reason for dropout as having to learn technical work as the available system of secondary education did not ensure any job (NCAER 2007). Generally, low educational development, which is represented by high non-enrolment among the relevant age groups, also leads to high dropout. Non-enrolment, dropout and child labour are directly related (Buragohain, 1997). With a large number of children already out of schools and opportunities being available for wage labour, the chances of children dropping out from schools are very high.

Some earlier studies reveal that a large number of dropouts emerges in the first three classes (Classes I-III) (Prakash, 1998). A very small fraction of the total students enrolled in Class I succeeds in completing primary education, while an even much smaller proportion of students succeeds in reaching the middle stage of education. In fact, nearly 50 percent of children dropout in Classes I-III. But as one moves from a lower class to the next higher class, the propensity to dropout declines sharply. A serious issue is that those who dropped out from Classes I-III, have high chances of relapsing into illiteracy. It is argued that the central purpose of primary education is to achieve literacy, and primary education is seen also to constitute the foundation of subsequent higher stages of education (World Bank, 1990). This view is probably based on the assumption that during the initial period of 4-5 years in primary schooling, a child can at best be endowed with the capabilities of reading and writing, counting, and limited numeracy, though it may also probably impart limited cognitive skills of thinking and problem solving (Prakash et al., 1990). Children drop out from school because they have to work - is not enough for conclusion. The recent

survey of NCAER (2007) estimated that only about 42 percent of dropout children aged 10-19 years are engaged in earning activities.

This paper makes an attempt to find out the reasons for dropout and the relationship between dropout and poverty and other associated factors through a multivariate model.

Data Sources

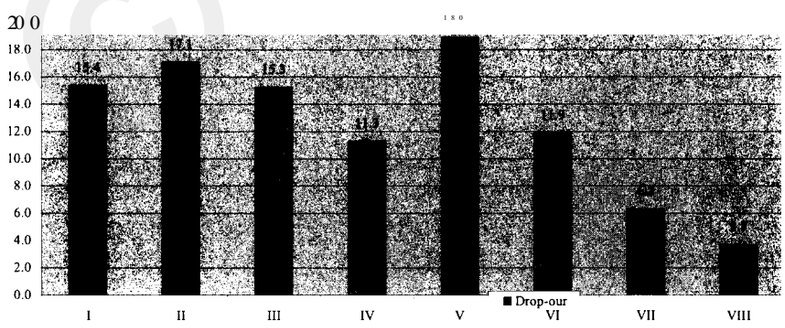
The Orissa Primary Education Programme Authority (OPEPA) had conducted a household survey in the month of October 2005. All households were covered to capture the information related to children in the age-group of 0-14 years.Village-wise non-enrolment and dropped-out children were estimated at district level for comparison as well as for matching with other variables from secondary sources. Dropout at primary and middle level data has been considered from this source (Table 3). The National Council of Applied Economic Research (NCAER) also conducted a survey in April-June 2006 to identify the major reasons for dropout at the secondary and senior secondary level for 11 states. The rate of dropout from secondary education has been taken from NCAER's report on 'The Reasons for High Dropout Rates in Secondary and Senior Secondary Stage in India' (2007).

II

Dropout at Primary and Middle Levels

According to OPEPA 2005, survey a total of 187,862 children in the age-group 6-14 years dropped out from various classes at the elementary level. About 87 percent dropped out at the primary level and only 22 percent dropped out at the middle level. Within the primary level, about 15.4, 17.1, 15.3, and 19 percent children dropped out from Classes I, II, III, and V, respectively, whereas only about 3.7 percent dropped out from Class VIII (Fig. 1).

FIGURE 1
Class-wise Drop-out Rate in Orissa



Sources: opepa

TABLE 3
Class-Wise Dropout Rate in the Age-Group 6-14 Years by District in Orissa

(in percent)

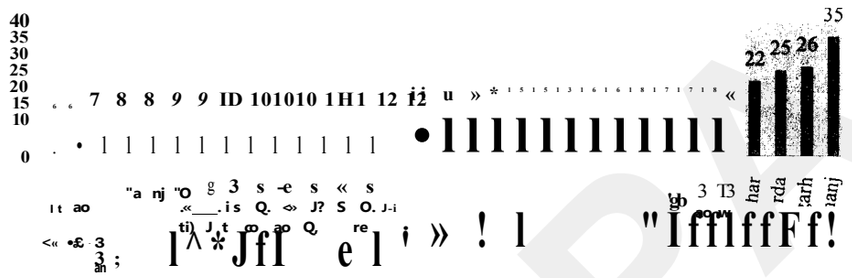
	I	*II*	*UI*	*IV*	*V*	*n*	*VII*	*VIII*
Angul	15.8	14.6	14.5	11.4	18.9	11.0	9.8	4.1
Balasore	16.8	18.7	12.8	10.7	12.7	14.0	7.5	6.7
Baragarh	10.2	10.6	13.4	12.4	20.8	15.8	12.6	4.2
Bhadrak	11.5	16.7	17.8	16.1	15.0	8.2	7.5	7.1
Bolangir	16.3	21.0	18.9	11.9	15.5	7.4	5.9	3.1
Boudh	12.3	8.8	7.7	14.3	19.0	30.4	4.0	3.5
Cuttack	9.8	17.3	18.2	12.5	16.5	8.6	12.0	5.0
Deogarh	15.8	18.6	14.5	13.0	13.9	11.3	9.1	3.7
Dhenkanal	10.8	11.5	12.4	10.8	23.5	16.1	9.3	5.5
Gajapati	8.4	15.7	18.0	13.6	23.1	11.7	6.0	3.5
Ganjam	9.4	11.9	13.6	13.0	25.1	15.4	8.3	3.3
Jagatsinghpur	7.0	16.0	15.6	11.0	11.3	13.3	11.6	14.4
Jajpur	11.7	17.1	16.4	13.0	14.5	10.7	7.7	8.9
Jharsuguda	7.7	12.7	15.7	12.8	8.5	17.6	12.3	12.8
Kalahandi	19.5	21.6	17.5	11.0	16.9	7.4	4.3	1.8
Kandhamal	13.9	15.2	14.2	8.7	21.4	17.6	6.7	2.3
Kendrapara	10.3	15.6	14.7	12.2	17.5	13.2	8.3	8.2
Keonjhar	22.1	19.3	18.6	9.0	15.6	8.4	4.4	2.7
Khurda	25.2	9.7	11.5	11.6	17.5	8.1	9.3	7.2
Koraput	10.0	17.3	16.2	9.8	29.1	12.0	3.6	1.9
Malkangiri	16.9	26.5	19.4	10.9	17.0	5.6	2.6	1.2
Mayurbhanj	35.2	19.0	12.2	8.3	7.9	9.6	3.2	4.5
Nabarangpur	17.7	26.8	19.3	11.5	14.8	5.7	3.1	1.1
Nayagarh	5.7	8.5	11.2	12.4	19.2	18.6	15.3	9.0
Naupada	14.7	18.5	16.0	12.1	14.1	15.6	4.0	5.0
Puri	15.3	12.4	12.0	12.7	13.3	10.5	11.5	12.4
Rayagada	8.6	11.6	13.0	9.4	32.8	20.0	3.1	1.6
Sambalpur	11.3	11.7	12.7	12.3	15.5	18.8	10.8	6.8
Sonepur	5.6	10.6	11.5	12.6	28.8	13.1	12.4	5.4
Sundergarh	26.3	21.0	13.1	10.6	10.9	7.6	6.4	4.1
Orissa	15.4	17.1	15.3	11.3	18.9	11.9	6.3	3.7

Source: OPEPA

At the district level, the highest dropout from Class I is found in Mayurbhanj (35 per cent). Which it is relatively low at below 10 percent in Sonepur, Nayagarh, Jagatsinghpur, Jharsuguda, Gajapati, and Ganjam. The percentage of dropout from Class I is high at 26, 25, and 22 in Sundergarh, Khurda, and Keonjhar, respectively (Fig. 2). The dropout rate in class II is higher than the dropout rate in Class I in all the districts. The dropout rate in Class II is highest in Nabarangapur (26.8 per cent) and Malkangiri (26.5 per cent). It is worth mentioning that about 69 and 78 percent of the population in these districts is Scheduled Caste (SC) and ST, respectively.

FIGURE 2

District wise Per Cent of Dropout from Class I

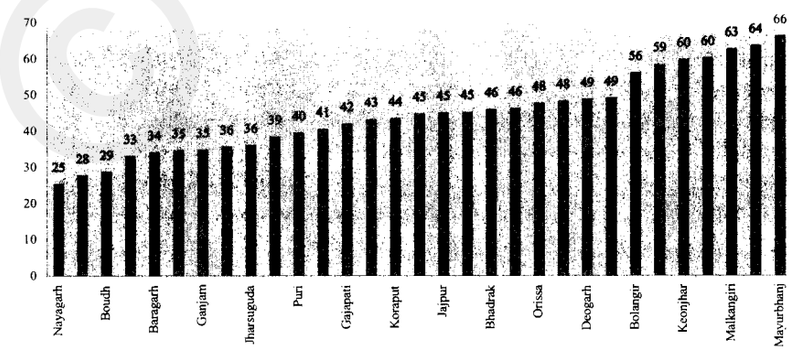


« **Sources: OPEPA**

In Mayurbhanj, 64 percent of the population is from the SC and ST categories. This implies that the high percentage of SC and ST category people, who are characterized by low literacy and low development, has a negative impact on the overall development in general and educational development in particular in Orissa. The dropout rate in Class III is almost uniform in all the districts except Boudh. A total of about 48 percent of all children dropout from Classes I-III. The percentage of dropouts from Classes I-III is very high above 50 percent in the seven districts of in Bolangir, Kalahandi, Keoghar, Sundergarh, Malkangiri, Nabarangapur, and Mayurbhanj (Fig. 3).

FIGURE 3

Dropouts Percentage from Classes I-III in Orissa



The major hurdle is that those who dropped-out from the first three classes (Classes I-III) would not have learnt sufficiently to label them as literate. About 47.8 percent children dropped out from the first three classes. If these children are not brought to the 'Alternate School to School Camp', they will deter the attainment of universal elementary education in the state.

The number of classes in the primary to secondary level is not uniform across states. The middle level consists of classes VI-VII1 in Orissa. Out of 22 percent of all dropout children from the middle level, about 12 percent dropout from Class VI itself. A very high dropout rate from Class VI is observed in Boudh (30.4 per cent) and in Rayagada (20 per cent). The percentage of SC and ST population in Boudh and Rayagada 34.4 and 70, respectively,. In all other districts, the dropout rate ranges from 6 percent to 19 per cent.

Dropout Rate in Secondary and Senior Secondary Schools

A total of 46 secondary schools were surveyed in nine districts to obtain a sample of dropout students. A total of 1440 students dropped out from these schools in Classes VIII-XI. Out of these dropout students, 1125 students were interviewed to elicit the reasons for dropout from the respective classes (See Table 4).

TABLE 4
Sample of Dropout by Social Groups at Secondary Level

Segment	*2004*			*2005*		
	Boys	*Girls*	*Total*	*Boys*	*Girls*	*Total*
STs	56	37	93	80	44	124
SCs	99	46	145	129	66	195
Others	178	91	269	203	96	299
Total	333	174	507	412	206	618

Source: NCAER (2007): 'Reasons for High Dropout Rates in Secondary and Senior Secondary Stage in India', Volume **11** Appendix Table.

Out of the 1125 dropout students, about 47 percent were from SC/ST category. Within the sample, about 66 percent of dropout students were boys and 34 percent girls.

TABLE 5
Percentage of Dropout Students by Classes

Year	*VIII*		*fx*		*x*	
	Boys	*Girls*	*Boys*	*Girls*	*Beys*	• *Girls*
2004-5	7.0	4.1	6.9	5.0	4.8	4.3
2005-6	6.4	4.1	7.4	4.6	7.7	4.5

Source: NCAER (2007): 'Reasons for High Dropout Rates in Secondary and Senior Secondary Stage in India', Volume III Appendix Table-B.

Table 5 indicates that an average of 7 percent of boys dropped out from Class VIII in 2004-05; the percentage declined to 6.4 in the year 2005-6. Dropout rates among girls were low at 4.1 percent in both the years. The dropout rate from Class IX

among boys slightly increased from 6.9 percent in 2004-5 to 7.4 percent in the year 2005-6. In the case of girls, however, it decreased slightly during the same period. The dropout rate from Class X increased during this period among both boys and girls.

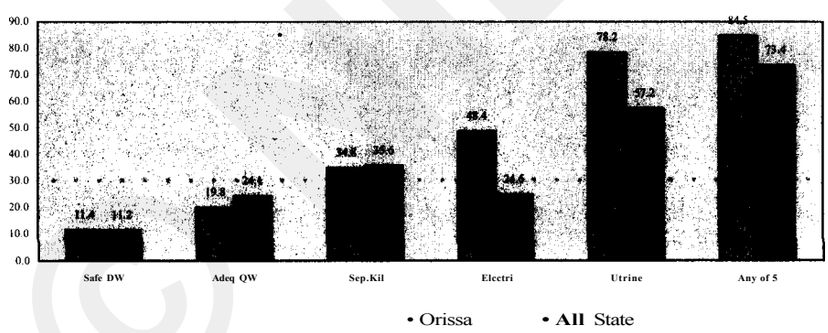
Table 5 shows that the dropout rates among girls are lower than for boys. This implies that the dropout rates may be high among girls in lower classes, but once the girls reach secondary level or senior secondary level, the chances of their survival in the schools are high.

Household Characteristics of Dropout Children

Owning house with adequate basic amenities is a good indicator of economic status of the household. Among all dropout students households, 95 percent own a house, but 50 percent of them own *kutcha* houses. 85 percent of households do not own basic amenities such as electricity, latrine, separate kitchen, safe drinking water, and adequate quantity of water (Fig. 4).

FIGURE 4

Availability of Basic Amenities in Household of Secondary Level Dropout in Orissa



About 60.5 percent of households held Below Poverty Line (BPL) cards as against an average of 40.1 percent in all-state households. Average household income stands at Rs 23,438, which is lower than the all-state households average of Rs 32,586. About 53 percent of all dropout households have to the percapita income of Rs 2001-4000. Only 1 percent of all dropout households have highest per capita income of Rs 18,000 as against 3 percent in all-state households.

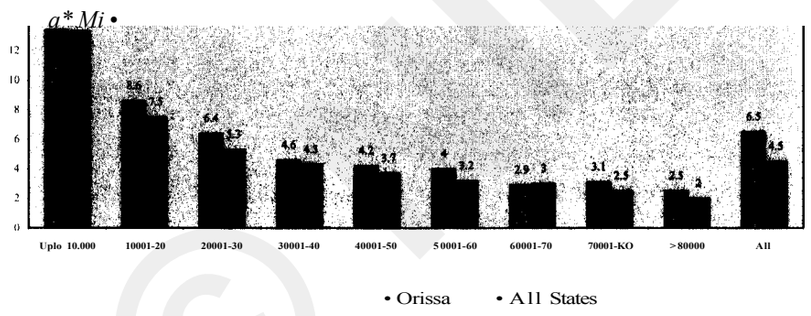
Of all dropout student households, about 55 percent own land, of which 68 percent are marginal farmers owning less than one hectare of land in Orissa.

Household Expenditure on Education

Households spend a substantial portion of their income on their children's education in the form of monthly fees, expenditure on books and uniforms, etc. The government bears a large share of such costs in the form of capital investments in land, building, and other infrastructures and provides various subsidies on tuition fees, books, and uniforms at the elementary level. However, these facilities are limited to only some SC/ST and Other Backward Classes (OBC) students at the secondary and senior secondary level.

Households spend much higher expenditure on their children at the secondary and senior secondary levels than at the primary and upper primary levels. Low income categories spend a high percentage of their annual income on education compared to high income categories (Fig. 5).

FIGURE 5
Percentage of Household Income Spent on Secondary Education, by Income Groups



Level of Education of Parents

Education occupies a unique role in human development. It acts as an agent of social change and modernization, and brings both social and individual betterment. Low level of educational development, including high level of illiteracy, among the parents in rural and urban slums is a major factor leading to non-enrolment and high drop-out rates. Moreover, the level of education of the mother in the household is more important for girls' education. First of all, there is the problem of motivating the parents to send their children to school when parents themselves are illiterate, or uneducated, unaware, and/or unconvinced about the benefits of education.

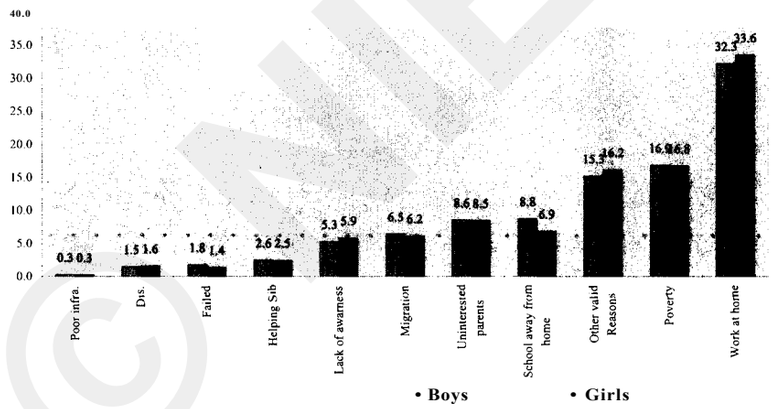
About 57, 32, and 7 percent of mothers of dropout students are respectively illiterates, have education upto primary level, and upto middle level, in Orissa as against all state averages of w55, 30, and 10 per cent. About 22, 34, and 25 percent of

fathers of dropout students are either illiterate, have education upto primary level, or upto middle level, respectively, in Orissa as against an average of 22, 30, and 23 per cent, respectively, of all-states.

Reasons for Dropout from Elementary Level

A number of specific reasons for dropping out have been cited by the dropout students. These are: (i) poor infrastructure in the schools; (ii) disability; (iii) failure in examination; (iv) need to help siblings; (v) lack of awareness; (vi) migration; (vii) out of country; (viii) uninterested parents for education, particularly for girls education; (ix) schools are away from home; (x) other valid reason; (xi) poverty; and (xii) work at home. 'Work at home' is the most important reason cited by more than one-third of the boys as well as girls. 'Poverty' is the second important reason cited by about 17 percent of the boys as well as girls. Subsequently, 'other valid reasons', 'schools are away from home', and 'parents are not interested' are the major reasons cited by a significant number of children for dropout (Fig. 6).

FIGURE 6
Reasons for Dropout from School



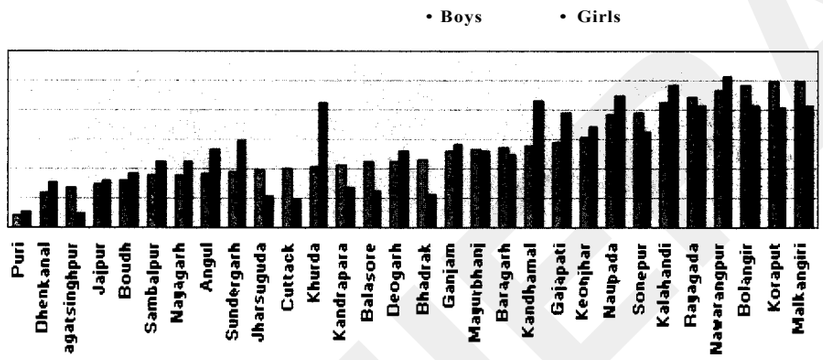
The percentage of children dropping out from school due to poverty is very high in eight districts, namely Angul, Balasore, Bhadrak, Cuttack, Jharsuguda, Kendrapara, Khurda, and Nayagarh. In Khurda, the capital district of Orissa, surprisingly a high percentage of boys, the highest among the districts, cited 'poverty' as the reason for dropping out; hence this group-specific problem needs to be addressed carefully. In Nayagarh and Jharsuguda, about 70 percent and 48 percent of their respective the total populations belong to SC/ST categories, characterised by low economic development and high dropout both among boys and girls.

'Household activities' is another major reason for dropout cited by about half of the children in Nabarangpur, Bolangir, Koraput, and Malkangiri. Household activity as a reason for dropout is relatively less in Puri, Dhenkanal, Jagatsinghpur, Jajpur, and Boudh. On an average, girls dropped out more due to household activities than boys.

However, in Bolangir, Koraput, and Malkangiri, a higher percentage of boys than girls dropped out due to household activities (Fig. **7).** It is not clear whether they dropped out to join the households' unpaid economic activities or to look after other non-economic chores.

FIGURE 7

Per Cent of Boys and Girls Dropped Out due to Household Activity



Reasons for Dropout from Secondary Classes

High incidence of dropout and correspondingly low retention and transition rates reflect the low level of internal as well as external efficiency of the education system. Dropout among poor performers in education may reflect the ineffectiveness of teaching-learning processes that, in turn, manifest as low levels of internal efficiency and productivity of education. As against this, when better performers dropout from schools it reflects the socio-economic irrelevance of education, which, in turn, manifests as low external efficiency and productivity. Thus, there are likely to be multiple reasons why students dropout from schools without completing their education. In this survey, students who dropped out from secondary/senior secondary schools were asked to indicate why they left school. As part of the survey, teachers in the schools were also spoken to in order to elicit their explanation for the dropout phenomenon for leaving the schools. A large number of reasons for dropout were assembled by the survey.

On an examination of the responses, 26 reasons for dropout have been identified. These are: (i) poor economic status; (ii) getting a job; (iii) economic activity within family; (iv) economic activity outside family; (v) high transportation cost; (vi) high cost of books and tuition fees; (vii) quality of education; (viii) limited facility in the schools, including incentive; (ix), lack of teachers; (x) school distance; (xi) difficult syllabus/not relevant curriculum; (xii) weak in studies; (xiii) to learn technical/non - technical activities; (xiv) discouragement/abuse and pressures by teacher for fees/tuition; (xv) married off; (xvi) need to look after younger and older members in

the family; (xvii) parents are not interested; (xviii) domestic work; (xix) no tradition to girls' education/ low importance of girls education in the family; (xx) brother/sister and other friends are not studying; (xxi) not interested in studies; (xxii), limited job in the market; (xxiii) lack of guidance and no proper environment at home; (xxiv) fear of other boys and others; (xxv) illness; (xxvi) others, including death of father/ mother or earning member of the family etc.

Education in the government schools is supposed to. Almost all government schools claim that they do not charge any fees from SC and ST students. However, the survey reveals that even though they do not charge tuition fees, they charge fees in various other ways. The students also need to spend on books, uniform/ school dresses, transportation, pocket money, etc. These costs may be considered as the direct private costs of households. In Orissa, about Rs 1500 is the estimated cost of secondary and senior secondary classes, which is slightly higher than the all-state average of Rs 1463. About 20 percent of all dropout students cited that they dropped out due to the high private cost. Within the direct private cost, inability to buy 'books and stationery' is the major reason.

Reasons Cited by School Teachers

According to the teachers, 'poor economic condition' and 'lack of awareness among parents' about the benefits of education are the major reasons for dropping out. Availability of 'wage works' is also a significant reason for dropout. About 27 percent of teachers reported poor economic status as the major and 24 and 11 per cent, respectively, reported 'lack of awareness' and availability of'wage work' as the other reasons for dropout (Fig. 8).

FIGURE 8

Teachers Perception of Reasons for Dropout Reasons *(in per cent)*

III

Determinants of Dropout

The recent studies highlight the multidimensionality of poverty and the heterogeneity of the poor. These also highlight the need to go beyond income poverty by using indices of human development and overall welfare. Poverty is not simply a matter of

inadequate income but also a matter of low literacy, short life expectation, and lack of basic needs, such as drinking water. Sumir Meghani (2003) considered the literacy rate as a proxy for human development, under the assumption that states with higher literacy empower the poor to take advantage of new employment opportunities by raising their productivity and skill set. In the Indian context, the chronic poor are identified as landless, depending for their livelihood on casual labour, having a *kutcha* house, sending their children to work to add to the meager household income, and compelled to borrow from the moneylender to meet basic requirements such as food. They also belong to such groups as SC, ST, women, minorities, and artisans (Planning Commission 2006).

Among the social groups, SC, ST, and OBCs accounted for about 81 percent of the total rural poor in 1999-2000, considerably more than their share the rural population. The poverty level of STs in rural areas was higher in Orissa (73 per cent) as compared to rural areas in Bihar (59 per cent). In urban areas in Orissa 59 percent are below the poverty line and in Bihar 43 percent are below poverty line (Planning Commission 2006).

The Approach Paper to 11th Five Year Plan draft report states that 'Spatial map and social base of poverty have significantly changed overtime and poverty is increasingly concentrated in a few geographical locations and among specific socially disadvantaged groups. In Orissa, the SC and ST population accounts for about 39 percent of the population as against 24 percent for the national average. Moreover, the dropout rate is much higher among SCs and STs than in the general category. Hence, a model has been developed by using a few indicators. These are:

Xi = Poverty: Poverty is one of the most important reasons mentioned by a large number of dropped-out children. Due to non-availability of poverty ratio at the district level, agricultural wage labourer has been considered as a proxy for poverty ratio. In a number of research studies, this group has been considered as chronic poor, characterised by landlessness, living in *kutcha* house, sending even children to work to add to the meager household income, and compelled to borrow from the moneylender to meet basic requirements such as food (Planning Commission, 2006).

Xii = Illiteracy: The level of female literacy has been considered as an indicator of the overall development of a region. If the level of illiteracy among females is high, it indicates low development of the region. The level of education of the mother in the household is important for girls' education. It is assumed that high percentage of illiteracy among women has direct relationship to the dropout outcome

Xiii = Percent of SC/ST population to total population: According to the 2001 census, the percentage of SC and ST population accounted for about 39 percent of the population in Orissa, against 24 percent as the national average. Moreover, the dropout rate is much higher among SCs and STs than for the general category. It is assumed that high percentage of SC/ST population has direct impact on the dropout outcome in Orissa.

The model has been specified by using these three major indicators as follows:

$$DR(j)= a+(3,(Xi)+ p_2(Xii)+ B_3(Xiii)+e, \quad (1)$$

where DR is dropout rate of group (j), Xi is poverty ratio of group (j), Xii is the percentage of illiteracy among women in group (j), and Xiii is the percentage of population belonging to the SC/ST categories in the group ***(j).***

TABLE 6
Result of Regression Analysis

Explanatory Variables	*Regression Coefficient at Primary Level Dropout*	*Regression Coefficient at Middle Level Drop-out*
Xi	0.153	-0.153
Xii	0.102	-0.102
Xiii	0.185	-0.185
Intercept	53.342	46.65
R^2	0.43	0.43
F	6.69	6.69
N	30	30

The results of the regression analysis (Table 6) suggest the accepting of all three indicators in the case of dropout students at the primary level (Class I-V). All the three coefficients are positive and significant. This implies that the dropout rate at the primary level is directly related to poverty, illiteracy, and high percentage of ST/SCs population. However, all these coefficients turned out to be negative in the case of middle level dropouts. This implies that illiteracy, poverty, or percentage of SC/ST populations do not have a direct implication on dropout outcomes at the middle level. However, these results are affected by multi-collinearity. Using the Klien (1965) step-wise method for detecting presence of multi-collinearity, signaled the presence of multi-collinearity.

Concluding Remarks

Orissa has a specific problem of school dropouts, as about 48 percent of children dropout from Classes 1-3, without learning something to label them as literate. If this group of children is not brought to 'alternate school to school camp' they will pose an obstacle in the attainment of universal elementary education in the state. The dropout rate is high where the population of SCs/STs categories is high. About 17 percent of all children stated poverty to be the main reason for dropping out. More than one-third of students cited the dropout reason for as household activities. 'School is very far' and 'unaware of benefit from education' are some other important reasons for children dropping out from elementary level schools.

The dropout reasons for the secondary level are somewhat different. The dropout children cited multiple reasons, such as high private direct cost, like different types of fees, transportation cost, and that the school is not available within walking distance, etc. The poorer households spent about 14 percent of their annual income on children's education. 'No quality education', 'no incentive' and 'lack of teachers' are other reasons for dropping out cited by the children.

'Poor economic status' is the major reason for children dropping out, according to the school teachers. However, the results of the regression analysis suggest that the dropout rate at the primary level is directly related to poverty, illiteracy, and high

percentage of population among ST/SCs. In the case of upper classes, the dropout outcome is not directly related the poverty, illiteracy, and high percentage of SC/ST population.

The above findings point out the need for the state government to ensure quality education to all children in general and at the primary level in particular in Orissa.

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RESEARCH ABSTRACTS

Title	Some Emerging Issues of University Financing (A Study of University of Pune)
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Finance plays crucial role not only in business transactions but also in educational activities. Its importance is conspicuously felt in the field of higher education, as most of the inputs, like services of well-qualified teachers, latest books and journals, well-equipped laboratories, would be adversely influenced and the quality of teaching and overall efficiency of institutions of higher education would be affected due to lack of adequate finance. Under the present circumstances, it would not be completely wrong to state that absence of reasonable amount of finance has been the main cause of many a maladies of higher education in our country.

For efficient functioning of institutions of higher education, like a university, an efficient system of financing is quite crucial. It is not only the total quantum of finance, but also different sources like fees, grants, donations, self-earnings, etc and its judicious allocation among different departments, academics and administrative units etc matter most. In brief, the problems related with finance are quite complex and they needed to be studied in depth.

Again, the field of higher education is also quite wide, comprising of the university, its various affiliated colleges, recognized research and academic institutions, various projects and programmes, etc. Therefore, when one wants to study various problems

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associated with "Financing of Higher Education", it would be convenient if the scope of the analysis is reduced to a relatively smaller unit. With this view in mind, the present study intended to analyse a few complex problems of finance in the University of Pune relating to only its post-graduate departments, and administrative office, projects and programmes, etc.

Thus, this research work confines its analysis to some "concerning problems of finance" faced by the University of Pune. Selection of Pune University seems to be quite appropriate as it is one of the renowned universities in the country with five decade's of reputation as a good university. Recently, (in the year 2002) the National Assessment and Accreditation Council (NAAC) have awarded it the prestigious "Five Star" status. It has a number of Advance Study Centers and an Academic Staff College. It has gained worldwide academic reputation.

And yet, its financial health is not so sound. Still it has to depend largely on the financial assistance from the state. Many of its novel projects and programmes are awaited for want of adequate finance. Quite a large number of academic and administrative posts could not be filled due to continued deficit budget. All this had been some adverse effects on the performance of the University. This study intended to look into some of the problems emerging out of different aspects of finances during the last decade or so.

Recently, with increasing globalization there has been an inevitable tendency on the part of the State government to shrink its financial assistance to universities. University of Pune also has to seek its own resources for its maintenance and development. It has to develop new courses and curricula to withstand the severe competition posed by globalized system of higher education. But such drastic reforms need substantial financial resources. In this study an attempt has been made to review financial problems faced by University of Pune in the context of rapidly changing circumstances caused by the course of globalization.

Analysis of both the qualitative and quantitative data on university financing led to a number of interesting outcomes. These findings, for the sake of convenience were grouped into two. They are:

Findings Based on Analysis of Secondary Data.
Findings Based on the Analysis of Primary Data.

While the first type of findings were more objective in nature, as they could be substantiated quantitatively, the latter were rather subjective in nature, as they were more of reflections, opinions, expectations and views .

A) Findings Based on Secondary Data

The researcher collected vast data on different variables over a period ten years, from various publications of the university. After analyzing this data the researcher inclined to arrive at some tentative findings. They are further grouped into three, as follows.

a) Findings about Trends in Revenue

1. Among various items of revenue to the University- revenue from a few items- such as fees from examination, salary grants and other fees like affiliation fee, convocation fee, eligibility fee, etc., constituted a major source of revenue to the University. These few items constituted more than 70 % of the total revenue of the University.
2. Over the ten years, the revenue stream was found to be steadily rising. In other word, revenue from 'university's 'own sources' never declined during the ten years.
3. The traditional items of revenue like tuition fee, admission fee, laboratory fee, etc were found to be contributing very less during the last several years. Perhaps the University could not raise them substantially.
4. It was interesting to note that overall revenue stream was constantly in the rise during 1991-92 to 2000-01. Some of the items of revenue like hostel fee, library fee, students welfare fees etc., were almost stagnate.
5. While the changes in the total revenue were found rising consistently, the rate of growth in the revenue stream was never the 'same' over the past ten years. The average annual rate of growth in the total revenue was 15.6 %. But during the same years it was 2 %(1995-96), or 6.6 %(1997-98) and 3.4 %(1998-99). Thus, the revenue of the University was found to be rising at different rates during different years.

b) Trends in Expenditure

Like general trends in revenue of the University, expenditure incurred by the University revealed following outcomes:

Sustained' rise in the expenditure' of the University implies that absolute expenditure incurred by the University was seen to be ever rising over ten years.

It was interesting to note that the percentage of expenditure over the base year (1991¬ 92) was ever rising in percentage.

Among various items of expenditures, expenditure on conducting examinations constituted the largest item of expenditure, followed by salary of teaching and non-teaching staff.

While the University spent on numerous items, only three or four items (Administration, Examination, Salary and Maintenance) commanded more than 75% of the total expenditure.

There was considerable difference in the estimated budgetary expenditure and actual expenditure incurred by the University.

c) Findings about "State Grants"

1. The most important finding based on the analysis of the secondary data suggested that day-by-day the University depended more and more on the grants from the state.
2. The University has to depend upon 'state grants' mainly because its expenditure pattern could not be controlled and restructured. Due to ever-increasing responsibility of the University, it is compelled to spend more and more on various items of expenditure. Though the revenue of the university was constantly rising, the expenditure was seen to be rising faster, causing constant deficit in the budget.
3. It was interesting to note that the size of the deficit in the budget was constantly rising every year as expenditure was also rising every year.
4. Though the University suffered deficit in the budget, almost every year, the state government did not bear total budgetary deficit through its grants because payment of the grants to the University are governed by the grant-in-aid rules, which are modified from time to time.

Thus, our statistical analysis of the secondary data brought home a number of interesting findings.

B) Findings Based on the Analysis of Primary Data

To collect primary information about the University financing, a sample of students, teachers and heads of selected departments, was taken. By using a well-structured questionnaire, different types of respondents were visited for close and informal interactions. It is a matter of pleasure to state that most of the selected respondents (50 students, 10 teacher, and 10 heads of the departments), gave wholehearted response to our enquiry. The following is only a gist of their responses to our interaction with them.

i) Interaction with Students

a) It was realized that majority of the students from all faculties were not aware of various details of the budget, such as allocation on different schemes, programmes etc., undertaken by the University for students.
b) Many students told that they were not much concerned with the budgetary process of the University. In their views, the University does not take into account expectations of the students while formulating the budget. Thus, an important segment of the University i.e. students is ignored by the University while formulating its financial plans.
c) Students informed that there was low allocation of resources on improving the quality of teaching, in terms of use of modern methods of teaching and learning, like video conferencing, pre-recorded speeches, use of LCD projectors etc.

d) While majority of the students opted Marathi as medium of learning- especially in humanities and social science, the University did not provide any special facility for this purpose.
e) The University has number of schemes of extending financial support to poor students. Unfortunately the budgetary mechanism did not enable the students to make use of such facilities.
f) Most of the University buildings, equipments, hostels, and laboratories are of old style. The University does not provide modern amenities like computational facilities, modern laboratory equipments, pre-recorded lessons on different topics etc.,

Thus, most of the students expressed displeasure on the state of learning in the University. In their views the budgetary system of the University was not able to meet the challenges of globalization faced by the university. Most of them suggested that self-financing and job oriented courses and advanced courses should be undertaken by the University

ii) Interactions with Teachers

1. The interaction with teachers and heads of the departments, yielded similar findings as suggested by the students.
2. It was suggested by the teachers that the University authorities while preparing the budget did not consult them. Further, if they made some constructive suggestions about budgetary allocation etc., they were least taken into account.
3. Both teachers and heads of the departments opined that while preparing budget, a procedure should be evolved such that views of teachers, students and heads of the departments are given due weightage.
4. There is need to enhance 'teacher improvement schemes' even at the University level. The budgetary provision for this purpose is very limited.
5. In fact, the whole University budget should be 'teacher and student oriented'. Today it is administration oriented, giving more weightage to examination and other non-academic activities.
6. Teachers and heads of the departments were unhappy with 'self-financing courses', because much of the income from these courses went to the University ('35 %') and visiting faculties ('40 %'), and very little was left for improvement of departments.

In this way teachers and heads of the departments reacted rather adversely on the University budgetary system.

Analysis of financial data of University of Pune brought home a number of interesting conclusions. Though it is difficulty to summarise them briefly, the following are some of the important conclusions which figured out clearly:

a) The structure and pattern of University financing reveals same traditional system established by the British university system, in which administrative approach was more predominant

b) There have not been significant changes in organization of various items of revenues and expenditures in the University budgeting system. There could be significant changes in classification of various items of revenues and expenditures, particularly with the revised University Act of 1994.

c) The approach to the budget by the University seems to be still traditional one. Because of this, the University could not make sincere efforts to raise its revenues and restructure. Consequently there is a wide gap between revenue and expenditure - requiring the state government to bridge this gap by paying 'heavy grants"

d) As the university depends very much on the state government for financial assistance, it has to surrender its academic and administrative autonomy considerably.

e) As the University's 'own resources' are meager, it cannot undertake any radical reform in its traditional system. Thus, the University budgetary system reflects continued traditional system of financial management.

f) Indeed, the University did experiment with initiating some of the self-financing courses. Unfortunately they could not gain ground due to traditional approach followed by teachers and students.

g) Though the University has command over about Rs.150 cr. annually through its budgetary processes, students nor teachers seem to be quite serious about the budgetary process. It is evident from the wide gap between first estimates, revised estimates and actual revenue and expenditure reflected in every budget.

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BOOK REVIEWS

SINGH, V.D. (2008): ***Language Learning, Teaching and Testing - A Companion;*** Cambridge University Press India Pvt. Ltd. New Delhi. ISBN 978-81-7596-593-5 (Hard cover), Pages 268; Price Rs. 495.

The present publication by an ex-professor of CIEFL in, establishes scholarly tradition of Dr. Johnson, whose work in the field of lexicon preparation have become guide to language learning. I am quite sure when this piece of work comes to the notice of scholars in India and abroad, they would try to emulate, if not better the effort.

The author himself has modestly admitted that "this book has grown out of my long years of teaching and research in the field of education", he explains the process too. It all began as a teacher's response to the difficulties novices felt comprehending technical words used in the lectures and books on the various subjects. This is the commonest difficulty in classroom instructions because both teachers and students have a different perception of the subject and the levels of communication. For a teacher to assume that all his students follow his lectures is quite natural even as it is usual for a student to anticipate that the teacher knows about his language inadequacy and he would take care of the difficulties being faced by him. The present book has attempted to fill up this gap. For a conscientious teacher, this book would function as a guide and for a good student it would open up the possibilities to enhance his understanding of the subject and the technicalities hidden in the language usage. Briefly stated, the gap between assumed and the actual causes of difficulties the *Companion* seeks to address.

Over a period of time, all languages come to acquire new terms and invest old terms with new meanings. The reasons for this acquisition are not far to seek. Theorizing and innovations are the basic causes that impact language growth and development. According to the author "the need to fine-tune their discourse has led writers to exploit the resources of the lexicon to invest words with new signification. They have often resorted to the devices of metaphor leading them to create expressions, such as 'the surrender value', 'the affective filter', 'a syncopated approach'."

The book is planned for a variety of users, especially for language teachers and teacher-educators at different levels and in different sectors, including that of Distance Education. The assumption that language learning occurs as direct outcome of teacher-teaching having been rejected, learning is seen as a phenomenon to be studied in its own right. Hence, the precedence of "learning" in the title of the book.

As can be easily noticed, the book comprehensively cover the theories, approaches, techniques, methods and innovations in the field of language teaching, especially of a second language. The scholars who have worked in the Asian/Indian contexts, i.e.

scholars like Michel West and N.S. Prabhu to name two, find appropriate coverage in the book as also the contribution of those from Europe (UK) and North America

As to the causes for language growth, there are many. These include inter-blending, ideology etc. Critical awareness too has further spurred terminological inventiveness, so that the term 'literacy' has, for example, come to acquire new meaning. Now sample an entry of the same in the book.

Literacy is shown to mean "The ability to read and write. This, however is the conventional and now almost dated definition. Today, 'literacy' is used in much broader senses. It implies more than a functional command of reading and writing. Literacy means not only satisfactory levels of communication skills, but also a level of social and political awareness.

"The stereotyped concept that divided communities into literate and illiterate has been challenged: a single-block concept of 'literacy' has made way for 'literacies.' To be literate today means to possess social and political awareness - awareness of one's rights and duties in society, of exploitations, deprivation, empowerment, etc.

"Contrasted varieties of literacy have been posited — lay literacy vs critical or emancipatory literacy, literacy of old cultures vs literacy in 'modern' cultures.

"Literacy types and practices vary as per the local literacy practices, such as that of the maktabs, pathshalas, and madarsas, family literacy, domestic literacy, democratic literacy, school literacy, functional literacy, survival literacy, textual literacy, 12 literacy, etc. Visual literacy has to do with critical reading of 'visual texts' such as TV commercials and broadcasts for their authenticity or lack of it, hidden biases, manipulation as such and manipulation of values, and the employment of visual content through such cinematic techniques as juxtaposition, ad superimposition. Multi-literacies include proficiency in using electronic devices; especially computer."

Going through this entry alone is enough to realize the levels and dimensions of our ignorance. Even the best of the literate among us could not emulate this scholarship.

Now, to learn that the book refers not merely to the area of education in all its forms and modes but also to linguistics and psycholinguistics and many more is enough to tempt any scholar to own a copy of the book. I admire the writer and his caliber. I am sure Indians can proudly claim that we have acquired name and fame not only in the fields of fiction, philosophy, Indian psychology and software technology but in such subject areas as well and feel quite comfortable with writing *Companions* as well.

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THAPA, Komilla and VARMA Meera et.al.(2008). ***Understanding Under-achievement in School Children,*** Department of Psychology. University of Allahabad, Allahabad; and Concept Publishing Company, New Delhi; ppxiv+153; Price Rs. 400.00 (Hard cover); ISBN:81-8069-486-0.

The book under review forms the substance of a research project conducted by the Department of Psychology, University of Allahabad, in collaboration with the State Institute of Educational Management and Training (SIEMAT) Allahabad. The study attempts to find out the nature and magnitude of under-achievement in school children. It identifies the factors, such as psychological and school related, that contribute to achievement and under-achievement in children. The perspective of students and their teachers and parents have been taken into account while understanding the phenomena. Case studies of some underachievers and overachievers are narrated and some intervention strategies are discussed. A case is made for the services of school psychologist/ counsellors in the school setup.

In the Foreword, Prof. Krishna Kumar writes that the study lay emphasis on developing a positive self-concept among students, an important factor influencing their achievement in school. Moreover, anxiety and stress are common features of schools indicating a serious backlog of educational reforms. Such feelings are especially intense among students whose achievement at school is lower than their potential. The goal of education is to enable every student to develop his/her capacity to the maximum. Let us hope that the study will arouse greater interest in the challenging task of improving school practices and ethos in order to make the system of education more effective.

Academic underachievement is a disparity between capacity and performance in which students receive lower grades than they are intellectually capable of earning. Underachievers are students of average or better intelligence who show unexpectedly poor performance in their school work. It is estimated to occur in at least 2.5 percent of school children. In this context, N. Pande and R.C. Tripathi (1982) proposed a dynamic model which postulates that an unsupportive educational environment leads to negative motivational consequences. Poor academic motivation interferes with the development and acquisition of various cognitive skills which are required for effective school performance. This impacts negatively on the academic self-concept and reinforces the negative evaluation of teachers, peers and parents (p-16). On the basis of literature survey, the authors note that underachievement is a complex problem with multiple incidents and determinants. Here, a holistic approach is taken with the intention of investigating this phenomenon from different perspectives by gathering inputs from students, their teachers and parents with the aim of identifying communalities as well as divergences in the perception of these three groups.

To gain insight into the problem of underachievement, a pre-study workshop was organized in which schools, teachers, and members of research team from SIEMAT, and Department of Psychology, University of Allahabad, participated. The factors which

emerged as key contributors to underachievement are: school climate including teacher-student relationship; family background; student motivation and emotional make up; and home inurnment,

The study was conducted in seven schools comprising private and public schools, boys, girls and co-educational schools and minority schools. The schools were: School A - (English Medium Private Co-educational School); School B (English Medium Private Boys School); School C (English Medium Private Convent School for Boys); School D (Minority, Private Hindi Medium School for Girls); School E (Minority Hindi Medium Private School for Boys); School F (Hindi Medium Government Aided School for Boys); and School G (Hindi Medium Government Aided School for Girls). Initially, 350 students of classes IX and XI were covered, 50 from each school, 25 each from classes IX and XI respectively. The sample comprised 229 boys and 121 girls. However, complete data was available from six students (Schools A to F) for 246 students.

The data from students comprised: Measure of ability through Raven's standard progressive matrices (SPM); School environment scale; Academic motivation scale; Affect scale; School anxiety scale, career worries scale; Academic self-concept; perceived ability. The performance and academic records of students comprised: total marks and percentage, marks and percentage obtained in mathematics in the half-yearly examination and the previous year's final examination. The information from parent's included: parent's rating of child's academic and learning characteristics; parent's ratings of child's ability and performance; need for school counsellor; and parent's aspirations and expectations. The information from teachers covered: teacher's rating of students academic and learning characteristics; teacher's rating of students ability and performance; and need for school counsellor. For the ease of the reader, the set of forms- Form 1 for students, Form II for parents and Form III for teachers - are provided in the Appendices A, B and C (pp 117-31).

The data was analysed statistically. Further, to investigate the factors related to achievement and underachievement, the scale factors of psychological scales - school involvement, academic motivation, affect, school anxiety and career worries - were treated as dependent measures and outcome measures covered: total scores on standard progressive matrices (Ability); half yearly examination percentage, half-year examination mathematics percentage; previous year examination percentage; previous year examination mathematics percentage; academic abilities rated by teacher; academic abilities rated by parents; and academic abilities rated by students (p-51).

The study revealed that 116 students (47 percent) of the sample could be classified as underachievers, 74 students (30 percent) were normal achievers and 56 students (23 percent) had academic achievement exceeding their ability (overachievers). The incidence of underachievement was comparatively higher in predominantly English medium schools. The highest number of underachievers was found in school B (N-28) which is 56 percent of the school sample. In school A, (N-22) underachievers were identified which is 44 percent of the school sample. In school C, (N-20) underachievers were identified, i.e. 40 percent of the school sample. Overachievers were found across all

schools but mainly in school D, where 16 students (32 percent of the school sample) were classified in this category.

There is a need to understand the factors which contribute to underachievement and the importance to develop intervention strategies to tackle this problem. At least four factors of the school environment scale - interesting school, supportive teachers, school image and fair teachers - showed significant differences across the schools. Apart from students of school D, most students rated their schools as being dull and boring. Students of schools B and C obtained lowest score on the interesting school factor. Students of schools D and A found their teachers to be moderately supportive, while students of schools F, B and C found their teachers to be less supportive. Regarding school image, school-D students had more positive views and students of school F were somewhat less positive. On the whole underachievement group of students found their schools and teachers to be less facilitative of their personal and academic growth, while overachievers found their schools and teachers to be more positive and more supportive.

The descriptive profile of the three groups - underachievers, normal and overachievers emerged on the basis of psychological variables described in the following paragraphs.

The underachievers perceived their school environment in a moderately positive manner, their academic motivation was high. On the affect scale, they obtained the highest score and their school anxiety and career related worries were found to be in the low-moderate range. However, as far as their ratings for academic abilities were concerned their own academic self-concept was found to be lower, while parents and teachers rated them poorly in comparison with the other two groups. The descriptive profiles of normal and overachievers were somewhat similar. However, the overachievers had significantly higher scores on the career worries scale, indicative of greater concern for formulating concrete career goals, and this in turn is facilitator of the academic achievement. On the factor of emotional recovery of affect scale, moderate overachievers were found to be highest on this scale and significant differences were observed between the moderate and marginal underachievers.

In the area of students', parents' and teachers' rating of academic and learning characteristics, overachievers rated their own abilities more positively and so did their parents, while for normal achievers, teachers and parents rated their academic abilities most positively. For the underachievers, the teachers have low expectation from them. Their parents as well rate their abilities rather negatively, though to less extent than their teachers. This negative assessment impacted on their academic self-concept so that they tended to perceive themselves less positively. The crucial variable is the teachers' assessment and evaluation that differentiates between the groups. The teachers rated the academic abilities of girls' vis-a-vis those of boys more positively. Girls also perceived the school environment more positively.

Among the outcome measures, academic self-concept was most consistently related to all scale factors. School anxiety showed a strong negative relationship with academic

self-concept. For two schools, A and B, career worries were negatively related with student perception of their academic qualities.

The need for school counselor was felt in all schools by both teachers and parents. It was felt that school counselor would have significant role to play in enhancing and promoting the quality of education. One of his functions would be to provide counseling for personal problems, that is providing help for the entire range of learning behavioural and emotional problems faced by students. A second function would relate to career planning and assisting students in acquiring and processing information. Assessment is another area, it can be used for classifying students as an educational and vocational guidance tool and for predicting academic and vocational success. However, teachers rated counsellor's function, such as parent counselling and advising teachers, as being somewhat less important.

The case study approach facilitates a more comprehensive and personalized study of individual students. Case study of 14 students comprising 7 extreme underachievers and moderate overachievers each are reported. One point of interest and concern is that at least 50 percent of the underachievers had a negative academic self-concept, while only one of the overachievers rated academic abilities negatively. Another observation is that worries regarding the future were pervasive in both the groups. They felt that they would be unable to get the job they desired and aspired for, and there was lack of adequate career guidance and career related information.

In the area of intervention, one approach is the remedial model which involves initiating help when the student is experiencing achievement related problems. Another strategy is the developmental model in which attempts are made to identify incipient or mild development related problems and intervening to forestall further problems. In the preventive model, the goal is to forestall the onset of academic related dysfunctions. The authors suggest that intervention strategies should include aspects of effective education that is emotional literacy programmes. Studies have shown that emotional literacy programmes can lead to improvement in children's academic achievement scores and school performance.

In sum, the study attempts to analyse the problem of underachievement in students. The preponderance of underachievers in English medium schools and of overachievers in Hindi medium schools calls for a re-look into the policy of medium of instruction at the school stage. However, English may be taught as one of the subject in schools. Moreover, interest and attitude of parents towards children and facilities available at home play a crucial role in the development and education of the children. This is a painstaking study and authors deserve the gratitude of the reader for their endeavour.

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W. Newton SUTER (2006): ***Introduction to Educational Research - A Critical Thinking Approach.*** Sage Publications, pp 465, Price $ 74-95, ISBN 1-4129-1390-X (cloth)

This non-technical, hands on introductory text endorsed by scientific data and evidence aims at augmenting the level of comprehension and interpretation of both the qualitative and quantitative aspects of educational research methodology. The text equips research scholars and pre-service educators with learning tools about how to prepare a research plan, collect and analyse data, address research questions, hypotheses and finally organize and evaluate a report of their projects. The book is written in a simple and lucid style, which is easy to read as well as easy to understand and assimilate.

The web-based student study site caters to a variety of needs as it is supplemented by interactive quizzes, e-flash cards, web-exercises, research articles related to education, sample research critiques and proposals along with published examples of research concepts. These additional resources will go a long way to enhance the understanding of the concepts presented by the author in 'Introduction to Educational Research'.

It is a diversified textbook which might act as an excellent teaching tool for all disciplines. The author logically organizes the content into five parts, each of which describes an important ingredient of educational methodology. Each part comprises of an outline, overview, critical thinker alerts, practical examples applicable to the current trends, chapter summary and application exercises.

Part I 'Foundations', addresses major concerns within the parameters of educational research. Here, theory and practice are interrelated with focus on information databases, research methodologies and research findings, such as those available through the Educational Resources Information Centre (ERIC). The interview with Carolyn Csongradi (p 10-11) bears testimony to the fact that critical thinking plays a key role in enhancing the understanding of research in education. This part highlights the skills of the teacher action researchers, particularly their keen observation and reflection supplemented by analysis and evaluation. This segment also provides some simple tips in the form of concepts which act as vital clues to unravel the complexities of the research process.

This section explores how bias can be subtle, any data requires interpretation, control is vital, and intuition can often be misleading. Also, associations in research necessitate relevant information, the validity of contrasting groups and the power of statistical inferences. The final chapter of Part 1 depicts the wide diversity in approaches to educational research with special emphasis on the 'mixed method' approach, suggesting a research approach that is both qualitative and quantitative. Question 5 of Application Exercises (p 38) poses a challenge to stimulate critical thinking in an interested research scholar.

Part II of the book 'Research as Process' addresses major concerns related to the validity of the research problem with special emphasis on its ethical implications and the research language being employed. Research in education is an organic process, a

culmination of a series of integrated steps, which may eventually lead to a multiplicity of findings beyond the set parameters. This segment not only focuses on the percentile available and used, it also provides effective measures for non-cognitive constructs such as traits, attitudes and beliefs.

The section on 'Research Hypothesis' relates to four different types of variables along with three types of hypotheses. This section is supplemented by valuable suggestions on the issues being discussed through checklists and critical thinker alerts in small boxes, providing additional input to the research. The various tables used in the section eg. Table 5.3 'Examples of Confounded Independent and Extraneous Variables' (p 122) and Table 5.4 'Examples of Research, Alternative and Null Hypotheses' (p 131) serve as learning tools in the field of research.

The concluding section on theory and practice elucidates that a research process is guided by either theoretical or application-base orientation. The process is a continuous whole, where each step is monitored by the scientific methodology being pursued. This section highlights the fact that problem based research targets practical issues and that the solution is often guided by prescriptive models to enhance classroom learning. Question 3 of Application Exercises (p 162) stimulates the power of critical thinking and analysis in a motivated research scholar.

Part III addresses issues related to 'Data Collection' - the core component of any text book dealing with the methodology of educational research, namely control, sampling, and measurement. The three chapters comprising this segment form an organic whole.

Chapter 7, which focuses on 'Research Bias and Control', deals with the threats to the internal validity of a study, including extraneous events (p 172), instrumentation (p 173), mortality (p 174), regression and selection (p 175). These factors are primarily responsible for misinterpreting a 'biasing effect' as a treatment effect. Chapter 8 deals with 'Sampling in Research' and presents statistical concepts related to sample size and sampling designs. Question 4 and 5 of Application Exercises on p 226 are based on realistic assumptions and compel a researcher to exercise his critical and analytical faculties. Chapter 9 highlights 'Measurement in Research' and provides a basis for analysis of the validity and utility of the data. It also equips the reader with solutions to the question raised in the chapter about whether different types of reliability, sensitive to variable consistency can be computed.

Part IV of the book 'Design and Analysis' addresses the significant aspects of research design and states that experimental research is characterized by an intervention of some sort. "Common Experimental Research Designs" (Chapter 10) can be demarcated into different categories, including true, quasi-experimental and single subject designs. True experimental designs which incorporate a manipulation with random assignment like matching, yield quasi-experimental designs.

Chapter 11 focuses on the analysis of 'Common Non-Experimental Research Designs', a favourite with research scholars. Chapter 12 highlights the concept of 'Qualitative Design and Analysis' by augmenting the role played by both scientific perspective and creative - innovative approaches. 'Critical Perspectives' 12-1 on page

334 are valid pointers to this. Chapter 13 deals with 'Statistical Data Analysis' in quantitative research and the logic of statistical inference. The 'Highlight and Learning Checks' as well as 'Critical Thinker Alerts' provided in this segment act as useful learning tools in educational research paradigms.

In Part V 'Consumer to Producer', the chapter on 'Research Analysis and Critique' provides in-depth guidelines for research analysis and enhances the skill of writing critical reviews. The critical evaluation of published research presupposes a thorough comprehension of its purpose in the context and methodology as well as an assessment of its weaknesses and strengths to make its practical application feasible. This is substantiated through 'Award Winning Research Ideas' (p 393). Question 3 of Application Exercises (p 402) would certainly provide food for thought to a discerning research scholar.

Chapter 15 'Writing Research Proposals' addresses the practical considerations of preparing a research proposal, focuses on the components involved and outlines the criteria for evaluating research proposals. The author highlights the fact that the style of writing both the research proposal and the final report should be the same - lucid, precise and well-organized.

To conclude, it might be pointed out that W. Newton Suter's 'Introduction to Educational Research' offers a well-diversified yet integrated approach to educational research methodology, being grounded in scientific data and upholding a critical-analytical orientation.

The text empowers educational practitioners with useful learning tools about the major processes involved in educational research, beginning with the foundations and culminating in the writing and evaluation of a research report. This is the need of the hour, particularly in the context of today's evolving education landscape. The five inter-linked segments of the text are organized and presented with professional finess. In other words, a must-read for all research scholars and pre-service educators!

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V. UPADHYAY, Shakti KAK, Kaustuva BARIK and T. Ravi KUMAR [eds.] (2009): ***From Sialism to Neo-Liberalism: The Development Process in India.*** Daanish Books, Delhi, pp321,Rs. 595/-

The above volume brings together a collection of papers originally presented at a national seminar aimed at critically reviewing policies and programmes "in relation to various aspects of planning during the planning era and the changes effected from 1991 under the neo-liberal regime, the implications of the process of liberalization and globalization for the toiling masses of India, and the possible alternatives" [p5]. Neither in the Introduction

nor as a concluding statement do the editors provide a credible argument for the particular choice of the above title for their book. Why is pre-1991 India characterized as Stasis and post 1991 as Neo-Liberal, remains academically unexplained. Nevertheless, the book contains, by and large, a good collection of individual articles that seriously reflect on India's tryst with 'planned' development.

In a thought-provoking piece emanating from a close reading of the different Plan documents, Kamal Nayan Kabra begins by establishing that the chapter on "The Problem of Development" in the First Five-Year Plan, "... went beyond the then existing knowledge on the subject. In fact, it anticipated many ideas that were to make their appearance later in the development literature" [pi4]. In particular, Kabra notes the holistic approach of the First Plan, where economic planning was viewed as an "integral part of a wider process aiming not merely at the development of resources in a narrow technical sense, but at the development of human faculties and the building up of an institutional framework adequate to the needs and aspirations of the people" [pi 6]. Kabra also alludes to a 'clear prescription for a strong, responsive and democratic developmental state' in the First Plan's call for 'effective power in the hands of the state to be exercised with the necessary persistence and determination in order to ensure the furtherance of accepted ends' [p20]. And yet, within the same Plan, the section immediately following the 'holistic approach' rhetoric emphasized economic development that later became, as Kabra points out, the prime concern at the operational level. "Thus, in the First Plan itself, the die seems to have been cast in favour of economic development defined in terms of and indicated primarily by the rate of growth per capita GDP" [p23]. In the rest of his paper, Kabra provides readers with a nuanced reading, interspersed with interesting comments, of the remaining nine Plan documents with which he critically engages. What emerges from this survey, according to Kabra is "more or less continuing acceptance of the primacy of the economic component in a narrow GDP growth rate sense of the term in all the plans so far... What makes the prevailing situation indefensible is that what the First Plan conceptualized and formulated by way of the approach towards democratic, holistic development but shelved for reasons of exigencies of the day, seems to have been forgotten. Instead the short-run economic development perspective has been taken to be the regular, ongoing, and long-term development thinking which, by itself, or with some marginal conscious corrective, embellishments and supplementary action is expected to take care of the pressing popular concerns" [p50]. There is no doubt that students of development studies will find in this paper much food for thought on the concept and praxis of development.

Barik's paper on productivity growth in Indian manufacturing sector attempts an estimation of total factor productivity [TFP] covering recent years, and assesses the impact of economic liberalization on TFP growth of the Indian manufacturing sector by considering variation in sub-period growth rates in TFP. As happens too often in such attempts, the exercise stops where it should actually begin. In other words, the exercise does not explore/explain the reasons for observed growth rates of the TFP. All that the author is able to state at the end is that "[T]he negative performance of the Indian

manufacturing industries during 1980-81 to 2003-04, so far as productivity growth is concerned, is a matter of concern and calls for further analysis"[p69]. Thereafter the author conjectures on possible reasons for the observed phenomena which, however, need exploration and estimation.

Examining the theme of Investment and Disparate Regional Growth in India through an impact study of public investment by the Centre, Ravi Kumar comes to some interesting conclusions that have significant policy implications. One, according to him, a substantial proportion of impact associated with a large number of enterprises was lost to the regional systems in which they were located. Two, the loss experienced by the regional systems were independent of the level of development of the state economies. Three, the examination also reveals large variations in the value of the impact multipliers - both output and value-added - across the regional units, with magnitude of the multipliers being independent of the level of development of the states. While the exercise centre-stages the theme of central investment as a tool for reducing regional growth disparities, the fact that decisions regarding central public investments [that may or may not reduce regional growth disparities] are generally, not even largely, taken on the basis of the economics of the investment alone, is a phenomenon that is well known. Hence, it is intriguing why such a theme that could have been more usefully examined within a political economy framework, chose to confine itself to such a narrow economistic framework.

Upadhyay and Devashis Bose's analysis of the impact of trade liberalization traverses a wide territory. Essentiallym it also tries to understand, among other things, how much of the impact in terms of unemployment and deindustrialization could be attributed to trade openness measures. The paper makes some telling comments on the country's efforts to increase volume and value of exports. Despite schemes introduced to boost exports, the analysis calls into question the efficacy and sustainability of the export promotion measures operationalized by the government to enhance India's export performance. Further, in the opinion of the authors, "... the magnitude of incentives given to the exporters in the form of duty foregone, amounts to a high percentage of the gross fiscal deficit... In spite of the high subsidy accorded to the exporters, the exports have neither been able to make any substantial impact in the world market nor any impact in terms of generating employment in the industrialized sector" [pi 44]. The contention of the authors that the foregone revenue if collected could otherwise have been utilized in the social sector sounds good on paper but such neat transfers are hardly feasible in the manner in which government departments are currently constituted and/or operate. This suggestion, repeated at several places in the text, is akin to the oft repeated statements made about how even a miniscule diversion of funds allocated to defence would be sufficient to eradicate illiteracy among the population. Thus far neither has defence expenditure been rationalized nor has illiteracy formally been wiped out.

The two papers on Agriculture are disappointing for the simple reason that in the attempt to explain the dismal performance of agriculture, the authors bring in a number of plausible causal factors but fail to establish causality rigorously. For example, much has

been made of the decline in public investment in agriculture and particularly in the post reform period by both the papers. But neither of the papers systematically engages with what constitutes 'public investment in agriculture' and/or traces what particular kind of public investment decline has been responsible for which kind of deterioration and/or linked to what kind of public policies? Further, the angst about neo-liberal policies leading to deepening agrarian crises [Shakti Kak's paper, for example,] seems particularly misplaced since we are not provided any clue as to how good was agricultural performance pre-1991. Singh, in his paper, has listed eighteen points under 'Policy Options' most of which do not emanate from the earlier part of his paper. For example, to suggest that 'farmers' education and skill formation need to be intensified' and/or that 'agricultural education needs change to mould and induce young graduates to take up agriculture as profession', the author should have, at the minimum, demonstrated that lack of skill among farmers and/or lack of trained graduates is a constraint contributing to decline in agricultural productivity. Similarly, Shakti Kak's paper also contains a number of assertions that are not backed by credible evidence. For example, it is not clear on what basis the author asserts [a point repeated at several places in the text] that "… a large number of farmers are not able to ***correctly*** apply inputs like water and fertilizers to the high yielding varieties..." [emphasis added] [pi92], Sample again the following assertion: "The pressure ***[from whom?]*** to cultivate commercial crops with high investment has also increased the volatility of agricultural production due to crop failures. The resulting indebtedness has forced farmers to commit suicide" [emphasis added, p201].

B P Mathur provides a fascinating but disconcerting insider's view of how and why existing expenditure management practices of the country fail to serve the avowed purpose of securing economic development and social change. He begins by pointing out how budgets presented in Parliament generate considerable heat regarding taxation policy, funds allocated to various sectors of the economy, subsidies given for particular activities and the like, but, "very little attention is given to the fact whether money voted by Parliament has been wisely spent and best value for money has been secured"[p203]. Discussing the deficiencies accompanying the current budget implementation process, Mathur points out that, "Heavy savings and surrenders have been taking place under several Grants, while, at the same time, many schemes of national importance are starved of funds, distorting the budgetary process... there were persistent savings every year in the Department of Education, Health, Rural Development, and in the Department of Road Transport... Budgeted money could not be utilized for schemes, such as free education for girls, adult education, setting up of Navodaya Vidyalaya, primary schools in rural areas, special projects for eradication of illiteracy, vocationalization of secondary education, and non-formal education, etc., despite these being national priorities"[p205-5]. In an elaborate discussion of the nature of issues in expenditure management that the country needs to contend with, the author, among other things, points out that "[0]ne of the major problems with the existing budgetary practice is its 'input orientation', namely, funds are sanctioned without correlating these to output... There is need to change the

focus of budget to output and results in terms of quantifiable physical targets and delivery of services to the public"[p210]. The paper also discusses the magnitude and length of time characterizing ***excess non-regularized*** expenditure of state governments - ranging from ten to twenty years, and as on March 2002, the excess over-voted grants for 25 states stood at over Rs. 1,79,585 crores. How several countries have addressed similar issues of expenditure management through new management practices, which could be profitably deployed by the Indian government, also forms a significant part of Mathur's paper. For readers outside the bureaucracy, the paper is a brilliant eye-opener. What however remains unanswered is why these learnings do not lead to transformations while persons like Mathur are still ***within*** the bureaucratic system.

Shibala Meher grapples with the theme of inter-state disparities in fiscal capacities and fiscal transfers, deploying econometric methods on panel data to ascertain whether the principle of federal fiscal transfers followed the principle of fiscal equalization. This exercise revealed that "per capita transfer is positively related to per capita income implying regressive nature of the transfers. This is observed in the case of transfer of both per capita shared tax and per capita grants. Even the equalization grants failed to be regressive. From the findings, it can be concluded that there is a vicious circle of inequalities among the states in India. There is unequal fiscal capacity across Indian states" [p249-50]. It is not clear to the reviewer how 'altering the system of federal fiscal transfers more towards fiscal equalization grants to achieve horizontal equity' can address the issue of fiscal capacity. The author does not address the theme of what constitutes fiscal capacity - its components, measurement, indicators. Further, does governance have anything to do with fiscal capacity?

In what could have been a truly interesting piece titled 'On the Margins of Indian Planning', Archana Prasad attempts to trace the manner in which successive Plans have addressed dalit and tribal peoples question. The treatment of the theme is, however, very laboured making it difficult to decipher the central argument of the paper. Moreover, the paper has a number of tables, none of which makes clear the sources of their data. Nevertheless, some of the arguments of the paper provide much food for thought. According to the author, as far as the tribals are concerned, the non-comprehension by Nehruvian policy makers of colonial impact on tribal society, led the Nehruvian state to view tribal economy and culture as two distinct phenomena, which in turn was instrumental in making the state intervene in tribal societies with welfarist policies rather than with constructive and productive economic measures. Successive Plans contributed in no small measure to tribals being progressively alienated from land and sources of livelihood and becoming more and more dependent on welfare for redressal of their precarious existence. The different ways in which this alienation was achieved over time and across space in the name of economic development, makes for some very distressing reading. In the case of Dalits, the understanding of the problem and, therefore, measures to address the problem were different. The problem being traced to system of untouchability and lack of access to basic services, the redressal measures consisted, among others, in constitutional provisions and in emphasis on educational programmes.

Here again, according to the author, only from the Sixth Plan onwards, was welfare orientation supplemented with measures towards provision of productive employment. However, issues of decentralization and post-reform measures for development of productive resources have brought in their own contradictions leading to, as the author concludes, "the wheel turning full circle and a new age of imperialism has started for the SCs and STs in the last one decade"[p279]. Interesting questions relating not just to public policy but more important to questions of social and economic justice, to constitutional guarantees, nay to the manner of functioning of democracy itself, that emanate from this piece, remain, however, unarticulated.

Alpana Sagar in her paper on 'Evolution of Health Planning in India' provides a compelling account of the manner in which Indian planners have understood health, healthcare, and planned for health improvement of the population; in the process of tracing this evolution over the ten plan periods, she not only captures the shifts in perspectives of planners but also the impact these shifts have had as revealed by some very telling indicators of health. "The first three Five-Year Plans radiate the enthusiasm of a people of a newly independent country, and resonate with words like comprehensive services, improvement of rural infrastructure and equality and changes in institutions... By the Eighth Plan, the pendulum is seen to be swinging very clearly towards a retreat of the state from the social sectors, including health. The Ninth and Tenth Plans are clear that this process of reforms must continue. Issues related to stagnating health indicators, the lack of referral services decimating primary healthcare to primary level care reveal that medical care is one of the major causes of indebtedness today"[p307-8]. The author's close reading of the Plan documents reveals the nature and depth of the Indian state's compromise as far as health of its population is concerned. Thus for example, already between the First and Second Plan there were changes in outlays for different programmes. While outlays for primary health centres, hospitals and dispensaries, for water supply and sanitation, were decreased, that for family planning began increasing. By the Fourth Plan, family planning found its place as a programme of highest importance. Examining the burden of diseases by cause, the author points out that, even as recent as 2002, communicable diseases continue to be responsible for 50 percent of the burden of morbidity, injuries for 17 percent and non-communicable diseases for 33 percent. However, the combined percentage expenditure fell marginally for all communicable diseases - though the outlay for AIDS continues to be almost double the budget for malaria and thrice that for TB. It is also noteworthy that of the outlay for 2004-05 for Health and Family Welfare, health had received Rs. 2687.62 crores, while Family Welfare had received Rs. 5524.77 crore [p306]. While much noise is made of retreat of the state from its earlier commitment to comprehensive healthcare and the progressive fall into redefining public health as providing only 'essential care', the paper is completely silent on several crucial themes, not least among them being the causes for dismal delivery of public health services and lack of accountability of public health institutions and officials, particularly as far as the poor and marginalized sections of the population are concerned.

Overall, as indicated in the beginning, while some individual papers grapple with the theme of 'before and after' reforms, namely before and after 1991, the editors do not provide a cogent explanation for why this divide is important. Further, and more important, the editors have nowhere provided concrete evidence of how they have arrived at the alleged steady deterioration in the "indices that can portray the real conditions of existence of masses" [as mentioned in the blurb]. Either the editors should have worked towards making this self-evident by editing carefully each of the papers or tied up, ***critically,*** the findings of the papers in the *Introduction* or in a *Concluding* paper. Since neither of these have been attempted the raison d'etre for this edited volume to that extent remains unstated.

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Francois BOURGUIGNON, Yehuda ELKANA and Boris PLESKOVIC, (2007): ***Capacity Building in Economics Education and Research;*** The World Bank, Washington, *B.C.*

John Earle, in his paper in this volume, says "… the condition of economies in Central and Eastern Europe and Russian Federation at the time the socialist regimes collapsed is fairly well understood. Western economists, arriving soon after to teach in the newly established capacity-building organizations, immediately gleaned from their students that there was a virtual absence of any exposure to the neoclassical theories and empirical methods standard at that time in the West." (pg.278). That sums up the central theme covered in this entire book. The paradigm of economics has been generally quite different in several developing countries and the transition economies (constituents of the former USSR) compared to Western Europe, the USA and other advanced countries. In some countries even though the paradigmatic difference is negligible, the academic discipline and research standards are substantially low. In this background, a few academic "centers of excellence" have come up in some of these countries, in order to build up capacity to impart modern (western, neo-classical) economics, offer M.A. and Ph.D. degrees to students, and in that light get quantitative and qualitative research done pertaining to the social and economic issues relevant to these countries. The presumption is that only economists trained in such fashion, become useful for the native governments as well as other public and private sector organizations in policy making and economic analysis. The World Bank, its partners and some private foundations have been supporting such centers by providing generous funds over the last decade and a half.

In the light of the experience gained and to assess the future scaling-up efforts of these centers, a conference was held in Budapest in June 2005. Representatives of the

centers, viz. African Economic Research Consortium (AERC - Nairobi), Central European University (CEU - Budapest), Economics Education and Research Consortium (EERC - Kyiv and Moscow), New Economics School (Moscow), Center for Economic Research and Graduate Education (CERGE - Prague), China Center for Economic Research (CCER), and Global Development Network (GDN - New Delhi), participated in ***ths*** conference and presented papers that narrate their experience, pleasure and pain associated with establishing, consolidating, maintaining and keeping up these centers of excellence.

The present book contains the papers presented in the conference and the keynote address delivered by Janos Komai, opening remarks by Yehuda Elkana and Alan Gelb, apart from the Foreword and an Introduction. The papers have been organized into four parts, dealing with (i) lessons of experience and future directions, (ii) regional perspectives, (iii) developing graduate economics education programs, and (iv) scaling up capacity building to underserved regions.

Each paper presents an interesting 'story' about a particular center of excellence, including the circumstances under which that center has been growing. The issues generally relate to funding problem to start the center, to keep it going and its future, uncertainties involved, students' discipline, where the students should do Ph.D. - abroad at western universities or locally - later careers of the students and the risk of brain drain, jealousy problems between these newly created centers and already existing traditional departments in the old universities, etc. The issues also relate to salary levels, who would teach - foreigners or locals - if foreigners, what they would teach and for how long, what kind of locally relevant topics students can do research under the foreigners' supervision, whether the research papers on local topics would be acceptable for publishing in western academic journals, and so on.

Though I do not intend to discuss all these papers here, I would like to particularly mention two or three of them in view of some complex questions they raise.

William Newton-Smith's (Open Society Institute, London) paper discusses intellectual abilities of economics, history and philosophy as better suited to the resolution of issues of social policy, than those of physics and chemistry in a thought-provoking way. He also raises the question - What is meant by experience and capacity building? After some efforts he reconciles to "understand capacity building in the present context as creating the power to produce locally the human capital needed for the development and preservation of open societies. This might be facilitated by the creation of new institutions or by the modification of existing institutions." (pg.31). However, the issue is more complex. I tend to distinguish between two types of creating power: physical and intellectual. The former relates to the problems of funds, infrastructure (buildings and campus), labour (faculty staff) etc. Even if these problems of creating ***physical capacity*** are sorted out, another problem relating to the creation of intellectual power may still remain. All said and done, for several decades, people in some of these countries have got accustomed to economic-thinking according to a paradigm that is quite different from that of the neo-classical economics. The fact that their political regimes

collapsed may not necessarily mean that their paradigm is entirely wrong and hence they have to unlearn everything that they have learnt till recently. Basically the students have to raise their mental antenna and be positively convinced of the merits and demerits of the western schools of thought being newly taught to them now. This is an issue of ***absorptive capacity.*** I think, this concern becomes important especially for the reason when Newton-Smith says, "If you are thinking of creating an institution as part of a capacity-building exercise, do not do it. One should think instead of enhancing existing local capacity. The slogan should be: *enhance, do not create"* (pg.33).

Joh Earle (Upjohn Institute, Michigan) talks about the (un)willingness East Europe to absorb western economics for a different reason. "The problem of unprepared students is also related to the almost uniform hostility of most economics departments toward importing foreign skills and materials." (pg.279). He also points out, "In general, the dominant role played by the United States departments in setting the standards for the profession is probably greater in economics than in just about any other discipline, ... " (pg.281). Why so much interest in economics? Readers are unlikely to get a satisfactory answer to this question. One may, however, recall the statement by Eva Sundquist (European Union, Brussels), "So far we have funded some 12 Belarussians who have graduated. I think we all agree that if just one will return to Minsk, when the political situation improves, and ends up as a deputy minister of finance, it will have been worth the money" (pgs. 346-347).

John Earle's advice to the Economics Department of the Central European University (CEU) is worth noting: "The department could strive for something more than - or at least something different from - simply mimicking others in an attempt to join the ranks of the top 50 or top 20 programs in Europe. A vision of something unusual that the department may be able to contribute would help to create a stronger sense of shared mission among faculty and students. . . . it would help to build a reputation for the department outside the university as a place with a high level of research and teaching in general, plus a particular niche that differentiates the department from the mostly "plain vanilla" economics departments with whom we compete." (pg.288). This view is profoundly appreciable and applicable to other centers as well.

Some stories are success stories, while the others are stories of struggles. Eva Sundquist's short paper demonstrates that the whole process is an education, not only for the students, researchers and managers of the centers of excellence, but also for the donors in terms of the experiences they gain by funding. All the papers put together make very interesting material for academic managers. All said and done, this is a book on international difficulties of brainwashing!

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DOLTON, Peter, Rita ASPLUND and Erling BARTH (eds.) (2009): ***Education and Inequality Across Europe;*** Cheltenham: Edward Elgar, Hard-bound, pp.334 + index, price: £ 85.00; ISBN: 978-1- 84720-588-9.

That education and wage earnings are strongly correlated is now a well-established phenomenon. Individual earnings are a monotonically increasing function of education. Workers with more education earn higher wages than do workers with less education. This is true both in advanced and as well as developing countries. As Mark Blaug observed, "the universality of this positive association between education and earnings is one of the most striking findings of modern social science. It is indeed one of the few safe generalisations that one can make about labour markets in all countries, whether capitalist or communist." The relationship between the two, namely education and earnings, is generally analysed in the form of rate of return to education. Rate of return to education is estimated either with the help of Mincerian (or extended Mincerian) earnings function or based on discounted lifetime earnings and costs of education. The later, known as internal rate of return, is also regarded as an elaborate method of estimation of rate of return to education. Empirical research on both methods is abundant. Drawing from various primary and secondary sources, George Psacharopoulos estimated rates of return to education in different countries and occasionally provided updated compilations (see, e.g., the latest one, G. Psacharopoulos and Harry Patrinos: Human Capital and Rates of Return, in *International Handbook of Economics of Education* (eds.: Geriant Jones and Jill Jones), Cheltenham: Edward Elgar, 2004 pp. 1-57). But for this, one rarely finds a good compilation of studies on a cross section of countries. Harmon et al (eds.): *Education and Earnings in Europe: A Cross Country Analysis of the Returns to Education.* Cheltenham: Edward Elgar, 2001) analysed the earnings functions in fifteen European countries to analyse the relationship between education and earnings, and estimated private rates of return to education.

The present book by Dolton et al with fourteen chapters contributed by eminent scholars in the field makes a further contribution in analysing how expansion in education contributes to reduction in inequality in wages in Europe. However, the fourteen chapters are not country-studies. The several scholars analyse the relationship in Europe as a whole with data on a good number of countries in each chapter. However, we do get a good comparative picture on several countries of the region. The book is the main output of a research project entitled Education and Wage Inequality in Europe - EDWIN HPSE-CT-2002-00108) - a nine-country framework V project conducted from 2002 to 2006.

The book presents an extensive review of research and fresh new evidence on a variety of issues such as inequality in education, quality of education, inequality in educational outcomes, funding tertiary education, the phenomenon of over-education, inequality in incomes, gender differences in earnings, inter-generational income mobility

and labour market institutions in different countries. While the general research evidence shows that expansion in higher education leads to reduction in inequalities in earnings, and expansion of higher education also leads to reduction in difference sin educational achievement in the population (e.g., D. Cheechi, *Economics of Education,* Cambridge University Press, 2006), the present study is based on the presumption that the relationship between education and wage inequality is not straightforward and indeed quite controversial. In almost all the countries in Europe considered in the study, higher education has expanded very well over the years, the share of population (aged 25-64) having attained tertiary education increasing significantly between 1960 and 2005, though there are large differences between several countries, Italy and Finland figuring at the extreme ends. The average of the fourteen countries in the region increased by more than five times from 5 per cent in 1960 to 27 per cent in 2005. However, during the same period, wage inequalities have not fallen significantly. In fact, as the editors have shown (in chapter 1), wage dispersion ratio - ratio between the average wage of the 9th decile and the bottom decile, has increased in almost all the countries on which data are available. Whether such a wage dispersion ratio is appropriate to measure inequality in wages, or a standard Gini coefficient is better, is a different issue. It can be argued that while the difference in wages between the top and the bottom deciles have widened, there might be significant improvement between several other deciles. Barth provides in chapter 8 a very useful explanation on why the expansion in tertiary education may have increased the within-group productivity dispersion and earnings among the tertiary educated. The several studies in the volume analyse and throw light on various closely related dimensions concerning the effect of education on income inequalities, with the help of cross-section and time-series data. They also provide valuable insights into problems relating to issues such as measurement of inequalities using a variety of alternative indices, the extent of over-education, and also the economic effects of demographic changes, changes in education, job-satisfaction, funding and allocation of resources to promote equal opportunity, inter-generational mobility in wages and also intergenerational educational mobility, etc.

The book is indeed a valuable study; the review of research is useful; the wealth of new evidence is indeed impressive; the coverage of issues is wide and extensive; the statistical analysis is of high quality; and the discussion of the results is rich. The detailed empirical estimates, along with tables and graphs add to the value of the book considerably. However, with varying results from individual studies, the volume on the whole, only suggests that the relationship between education and wage inequality is not clear-cut and indeed is controversial and complicated, highlighting the need for further studies in the area. Perhaps in-depth country-studies with data over a long period might be more valuable in this regard. Most of the studies in the volume used data on about a dozen countries relating to a few points of time, and extensive cross-section household panel data of the European Community (e.g., Dolton et al on gender wage differences in Europe; Claudio Lucifora on demographic effects), and do not seem to have used continuous long time-series data, though some (e.g., Chevalier et al) have reported

country-specific regression results on a few aspects. The study is, by design, confined to European countries, with some reference to evidence on North America. But the issues covered are of wider interest to economists of education allover the globe. It would have been valuable to see whether the relationship between and earnings inequality is complicated everywhere including in developing countries, or in North America or it is confined to Europe only, as a large quantum of evidence on developing countries suggests that the relationship is not so controversial, if not definitely conclusive. Lastly, an observation on a general trend: life of knowledge seems to be getting reduced fast. While voluminous empirical research was conducted on these issues in the 1960s and 1970s, most of the earlier studies referred to in the present volume belong to the 1990s and the present decade, except for one or two classical studies like Freeman's *Overeducated American* (1976). Methodological sophistications of the later decades seem to be quite attractive. But for some certain minor aspects, I am sure, many will find the book very useful.

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