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Who Benefits from Higher Education Expenditure? Evidence from Recent Household Survery of India

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WHO BENEFITS FROM HIGHER EDUCATION EXPENDITURE? EVIDENCE FROM RECENT HOUSEHOLD SURVEY OF INDIA[1]

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Abstract

The paper unveils the pattern of incidence of higher education expenditure across various income groups using household survey conducted by the National Sample Survey Office (NSSO) of India. The analysis-based findings suggest that the estimated benefits extensively exceed to the richest income groups than to the poorest income classes. Addition of every other source of disparity to income inequality such as gender, location makes the group that is faced with multiple layers of inequality, vulnerable in terms of availing benefits from public education. Comparison of benefit incidence across various levels of education calls for greater attention for promoting well-targeted higher education subsidies. The findings, an account of 'marginal incidence analysis', suggest that the expansion of public higher education has begun to percolate the benefits though rather slowly, to the poor and hence, even a minute effort towards curtailing its expansion would lead to humongous loss for the poor.

Introduction

Governments in developing countries are faced with the task of redistributing the available resources as part of reducing the inequalities in the economic, social and political spheres. Government interventions, in this regard, are mainly of two kinds (Mahal, 2005). First, interventions aimed at increasing economic and political opportunities through quota system in public sector jobs, educational institutions, as also in the legislatures of central, provincial, and local governments. Second, direct financing/provision and in-kind transfers of social services like healthcare, education, sanitation, nutrition, social security, and other social welfare necessities. Governments in developing countries are increasingly relying on these major interventions, as they are faced with many problems in the design and implementation of fiscal policy or they do not have a de-facto progressive tax policy and an effective tax administration to alter the post-tax distribution of income (Atkinson, 2002; Chu Ke-Young, 2000). The in-kind transfer strategies of developing countries involve dominantly the programs that provide social services (such as education, health, social security, etc.) as they are regarded as the most important services for enhancing the long-run earning potential of the population, particularly the poor and the marginalised sections of the population (Hamid R Davoodi, Erwin R Tiongson, Sawitree S Asawanuchit, 2003). Therefore, the share of social sector expenditure in the public budgets is significantly sizable in many of the countries.

Given the size and importance of social spending, many countries across the globe are concerned with enhancing the effectiveness of expenditure through targeting and other viable policy strategies. According to Amartya Sen (1995), the theoretical underpinning in favour of targeting in any

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anti-poverty policy is very obvious: the more accurate the subsidy in reaching out to the poor, the less it costs in achieving the desired objective. It is a matter of cost-effectiveness in securing a particular benefit[1]. These targeting strategies help the governments enhance their fiscal health as part of achieving macroeconomic stability, increase the virtual fiscal space (VFS), divert the funds to developmental activities and also strive to ensure an appropriate share for the poor and needy in social spending. On the whole, tools of targeting may lay down the ways of providing public services to the deserving sections of the population without substantially increasing budgetary allocations and hence ensuring progressivity of public spending. However, there is a certain degree ambiguity associated with the progressivity of social spending. The question at stake is how does one ascertain the extent to which the existing allocations are reaching the poor and needy? This pertinent issue forms the focus of this paper in the context of Indian higher education expenditure.

A clear escalation is observed in terms of the expansion of higher education in post-Independent India. Before Independence, access to higher education was very limited and elitist in nature (The World Bank, 2005). In 1950-51, there were only 27 universities with 578 colleges providing education to over a million of students in the entire country. However, the system of higher education has expanded at a very fast rate, especially during the last quarter-century (Tilak, 2015). In terms of size and diversity, India has the second-largest higher educational system with 903 universities, 39,050 colleges and 10,011 stand-alone institutions catering to the educational need of around 36 million students as per the recent All India Survey of Higher Education (GOI, 2017-18). At the same time, a large proportion of the public resources, both at the national and sub-national levels, are devoted to the provision of higher education.

Maureen Woodhall (1969) justifies the public funding of higher education on two major counts. First, higher education fetches some benefit to society as a whole and there is a belief that benefit from higher education to the society always exceeds that of individuals. Since higher education contributes significantly to the societal benefit, the provision and consumption would be neglected if it were left entirely to private individuals to finance it. The second argument for subsidisation of higher education is based on equity considerations. Woodhall (1969) argues that if the opportunities for higher education were given only to those who could afford to pay for it, it would create the problem of inefficiency and inequity. The problem of inefficiency arises due to the exclusion of meritorious students who could not afford to continue education on their own means. On the other hand, if higher education is distributed according to the purchasing power of individuals there is every possibility of sustaining and aggravating income inequalities because higher education helps individuals gain better rewards in the form of better job opportunities and higher lifetime earnings.

Although Indian higher education has already entered the stage of massification, the expansion of higher education, according to the requirements of equity considerations, continue to remain as one of the challenges (GOI, 2017-18). Therefore, the present study makes an attempt to address both the supply and demand elements of higher education expenditure and seeks an answer to the question of 'Who benefits from higher education expenditure and to what extent? For this purpose, we carried out a Benefit Incidence Analysis (BIA) of public higher education expenditure.

Theoretical Perspectives

Governments spend on various sectors with a view for achieving optimal levels of social welfare based on States' priorities. When it comes to State's priorities, spending must be based on citizenry preferences. However, attaining unambiguous indicators on citizenry preferences is a very complex task (Campos, 2001). In view of the above limitation and the consideration of positive externalities, governments presume a 'paternalistic' role in the provision of 'public and merit goods' rather than conducting a direct assessment of citizenry preferences. However, while the question pertaining to how much governments are spending on public goods and merit goods is important, a more prominent question is, how well are the expenditures targeted and how progressive are they? This question assumes a greater relevance in the context of public higher education. Because higher education, unlike elementary education, is not a 'basic need' nor it is considered a fundamental right either. However, considering that there is a higher level of economic reward and social prestige associated with higher education and higher education-based professions in the society, it is reasonable to assume that the number of aspirants, who wish to pursue higher education, is always more than what can be accommodated by the higher education system of any country. As a result, a significant number of people find themselves excluded from admission to higher educational institutions through certain screening mechanisms. Thus, modes of exclusion get built into its fundamental structure, since higher education is inherently an elite and exclusive domain (Deshpande, 2006).

There is a wide range of theoretical approaches that explain the persistence of inequalities in the field of education. One of the prominent approaches refers to the role of Economic, Cultural and Social capital[2], mainly proposed by scholars such as Bowles (1972), Pierre Bourdieu (1986), and Bowles and Gintis (2002). According to this approach, societies and social/economic groups within the societies tend to reproduce the order of society by developing appropriate structures with the help of these forms of capital. Differences in access to the above forms of capital have created inequitable abilities among people with respect to the attainment of higher education, as these factors influence considerably the level of access, retention, attainment and job/labour market success of higher education aspirants.

Possession of economic capital, which is immediately and directly convertible to the money form, and the possibilities of its being institutionalised in the form of property rights (Bourdieu, 1986) assumes a greater significance in the pursuit of higher education, as it has a significant sum of direct and indirect costs embedded in it. This cost structure usually excludes those who cannot afford the cost of education in the context of capital market imperfection[3].

Relative Risk Aversion (RRA) theory tries to shed light on the root cause underlying the inability of expanding the higher education system to embrace students from low socio-economic backgrounds more specifically from the demand perspective. RRA has received a substantial attention in the recent literature (Holin *et al*, 2005)[4] and also several European researchers have found evidence to support RRA theory (Jenny Chesters and Louise Watson, 2013). The central argument of RRA theory is that the educational choices ultimately reflect an individual's desire to preserve the social status or class position of the family over generations and to avoid downward social mobility. That is, education is an instrument with which individuals attempt to maximise the probability of preserving *at least* the same social class position as of their parents so as to avoid downward social mobility. According to RRA

theory, inequalities in educational attainment persist because members of different social classes require different levels of education in order to reach the same social class as of their parents. When individuals reach a certain threshold level of education, which they believe will help them entry into the same social class position as of their parents, the costs of pursuing further education outweigh the utility of acquiring more education. Considering that this threshold level differs by social class background, RRA theory predicts that children from working-class backgrounds do not show much interest in pursuing higher levels of education as compared to children from higher-class backgrounds perhaps because they derive no utility from acquiring higher levels of education in terms of promoting their future social class position.

On the other hand, the hypothesis of Maximally Maintained Inequality (MMI), coined by Raftery and Hount (1993) posits that class-based inequalities in educational attainment persist until all members of high-status groups attain a threshold level of educational attainment (Alon, 2009). However, educational expansion may not reduce class-based inequalities because higher education is not universal in nature and an increase in opportunities may encourage more students from an affluent background until the level of higher education attainment reaches a certain threshold. Lukas (2001) added a different dimension to the discourse on educational inequality in terms of differentiating between quantitative and qualitative aspects of educational inequality with respect to high school-level graduates. Accordingly, he argues that privileged groups secure, qualitatively, a superior education, while quantitatively, similar educational institutions using their status advantage. This, in turn, perpetuates educational inequalities as the privileged groups who gravitate towards prestigious institutions can achieve an immense success as compared to those studying at less prestigious institutions.

India lends itself as the best possible natural lab for testing the above mentioned theoretical premises. Given that caste, class, religion, gender, region, ethnicity, etc., constitute the major drivers of educational inequality, one can find implications of all these theories one way or the other in the realm. Moreover, these categories are not mutually exclusive, they even overlap and mutually reinforce each other as well (Tilak, 2015). Especially, the impact of class and caste is predominant in every aspect of India's societal life. There exist a fair number of arguments that have attempted to explain caste within a class framework. For example, M N Srinivas (1964) argued that the Indian caste system has perpetuated class differences. This could be mainly due to two important reasons. First, there is a deep-rooted concern and value attached to the ritual purity and belief in Karma in Hindu society, which in turn, make both the privileged and unprivileged communities remain content with the status and role into which they have been born. Secondly, upper castes have since long retained their positions of advantage by usurping for themselves the changing socio-economic need of the society. M N Srinivas argues that upper castes retained their privileges in the past through ownership of land and proximity to the culling powers. In the modern age, taking advantage of a modern and westernised educational system, they came to form a new superior class (Srinivas, 1964).

However, Mukherjee (2000) argues that articulating the caste system within the class structure does not reflect the reality of India. Further, he claims that neither caste in itself nor caste and class constitutes the reality of today's India. It is rather caste in class, where the class structure has cut

across the caste hierarchy, forming a new alliance and antagonism. Although there exis ambiguity and inconclusiveness as for as the association between caste and class is concerned, it is widely recognised that in the Indian context, the factors responsible for educational inequality do not function in isolation but are interlinked and they get further strengthened with the addition of every new dimension of inequality (Tilak, 2015). Hence, educational inequalities in India are systematic and systemic in nature. They are systematic because there seems no randomness or arbitrariness behind the persistent inequalities and systemic due to the structural components of the society that is responsible for the persistent inequalities.

Therefore, public intervention in higher education is expected to break these structural inequalities to provide a level-playing-ground for the attainment of higher education. Absence of well-targeted and progressive public higher education expenditure may lead to a further justification of the existing social order, as it is the affluent sections of the society that are in the forefront when it comes to benefitting from the public resources[5].

Review of Literature

The Benefit Incidence Analysis has become an established approach to assess the distributional impact of public spending/subsidies in developing countries since the path-breaking works of Meerman (1979) on Malaysia and Selowsky (1979) on Columbia. Analysis of the distributional effect of public subsidies across countries has become a new addition to the benefit incidence approach with a study conducted by Demery (2000). Subsequently, Davoodi *et al* in 2003 extended the comparison of benefit incidence in the international context to 56 countries for two different time points. The authors also tried to establish a relationship between benefit incidence and certain outcome indicators of health, education, income, governance and information. Studies conducted by Mahal Ajay (2005), Jahid Asgar & Mudassar Zahar (2012) and Anuneeta Mitra (2015) are some of the major studies that have analysed the distribution of education expenditure in Asia. Both Mahal Ajay (2005) and Anuneeta Mitra (2015) have used National Sample Survey Organization (NSSO) data. Both Anuneeta Mitra and Jahid Asgar & Mudassar Zahar have explained the benefit incidence, using concentration curve and index.

The empirical research-based results suggest mostly a regressive and ill-targeted health and education expenditure that literally transfer resources from the poor to the rich, but designed to fetch a high proportion of benefit for the poor (implicit assumption). This unequal distribution of subsidies is driven mainly by inequality at higher levels of health and education incidence of benefit (Mahal, 2005). The findings also suggest a strong association between progressive spending policy and welfare indicators. These findings recommend a targeted public spending for attaining better welfare indicators, as the rich people can afford and are willing to pay for health and education. In other words, pro-poor spending does not undermine the investment/consumption of social services by rich people.

Based on the above findings, one may also recommend an increased public intervention in elementary education and a reduction in public spending on higher levels of education. However, this kind of argument holds well in the event of higher education expenditure benefit consistently and disproportionately accruing for the rich forever. Research studies suggest that rich people may capture the benefit of public spending in the early stages of implementation (early capture) due to the cost

involved in participating in a higher level educational program (Peter Lonjouw, 1999). A subsequent expansion of the program (higher education facilities) reduces the marginal cost of higher education, enabling the poor to capture the benefit in the later stages of program implementation (*Ibid*). An analysis of benefit incidence of higher education expenditure at two or more points of time allow for a verification of the above theoretical premises.

Researchable Issues

The present analysis attempts to explore a few of the most concerning issues with regard to benefit incidence of public higher education expenditure, given the paucity of research in the area. They include,

- Benefit incidence of higher education expenditure with regard to the existing allocation for the recent year i.e. 2014 (horizontal distribution).
- Assessment of benefit incidence of education expenditure of different levels of education.
- Assessment of change in the benefit incidence on higher education expenditure over a period of time (vertical distribution).

Methodology, Data and Variables

What is Benefit Incidence Analysis (BIA)?

BIA is better understood in relation to the concept of targeting and progressivity of social spending (Cuenca, 2008). Targeting is a tool used in the selection of eligible beneficiaries under any government intervention. It is intended to increase the efficiency of the program by increasing the benefit that the poor can access with a fixed program budget. A proper targeting always allows the governments to reduce the budgetary requirements of the program, while still delivering the same level of benefits to the poor.

BIA brings both the supply and demand elements together for public services and can provide valuable information on the inefficiencies and inequities in the government allocation of resources for social services and on the public utilisation of these services (Davoodi *et al*, 2003). It can identify how well public services are targeted to certain groups among the population across gender, social groups, income quintiles, and geographical units.

Methodology of BIA

Estimation of Benefit Incidence is done through the following distinctive procedure. It involves three major steps (Younger, 2002). The first step deals with the valuation of the services provided by the public authorities. In the second step, individuals/households (users) are ranked based on some criteria feasible/appropriate to the needs and objectives of the study. Finally, incidence of benefit is compared across different groups and proper conclusions are drawn in the last step.

Valuation of Public Services:

Literature has listed three major approaches to assess the value of any public service to the users (*Ibid*). The first is the simplest approach that uses a binary measure of whether or not one has access to the services. This approach implicitly assumes an indistinguishable benefit for all who participate in or use a particular service and hence, may introduce a systematic bias in interpreting results. The average unit cost of service provision is considered as a perceived benefit in the second approach[6]. The third approach estimates the demand function of public services. This approach facilitates the estimation of the value of public services using compensating variations from the demand function. The second approach is a more standard approach followed in the recent literature and hence, the present study adopts this approach to the valuation of public services.

An average unit cost can be attained by dividing the total government expenditure on a particular service by the total number of users, excluding any cost recovery or user fee. Here, users of the service are considered as the ultimate beneficiaries of service provided by the government. Hence, data on service users, public spending on the services and cost recovery are required for deriving the average unit cost. However, there are three measurement issues that need to be resolved prior to the calculation of an average unit cost (Hamid R Davoodi, Erwin R Tiongson, Sawitree S Asawanuchit, 2003). They are,

- What should be the source of users' data?
- What is the nature of government spending data on a service?
- How to treat cost recovery data?

With regard to the first issue, the literature on BIA always suggests obtaining data on service users from household surveys. Although information from official records on the users may be more accurate than the household survey-based data, they do not often provide information on users' consumption, income and other socio-economic characteristics that are necessary for identifying the incidence of benefit. Therefore, the design of the household survey is more important. Second, the computation of an apt average unit cost necessitates a comprehensive spending data. In other words, spending data on a particular service should cover all the levels of government and should include both recurrent and capital expenditure.

Finally, information on cost recovery is needed by income/consumption groups or by other characteristics of the groups on the basis of which they are classified for analysing the incidence of benefit. This will help us to calculate the net benefit obtained by each of the groups from a given public service at a given point of time. The average unit cost of a particular service can be represented through notations in the following way.

$$\text{Unit Cost} = U_i = \frac{S_i}{E_i} \qquad \text{..... (1)}$$

U_i is the unit cost of i^{th} public service

S_i is the net government spending (excluding cost recovery) on i^{th} public service

E_i is the total number of i^{th} service users

The average cost of providing service is assumed to be the average benefit from government spending. This assumption attributes benefit from government in-kind expenditure to individuals' welfare.

Ranking Individuals/Households/Users:

Benefit incidence analysis is intended to analyse the distribution of public spending based on certain welfare and other measures, while at the same time, ranking and grouping of users is very crucial to this entire exercise. At the outset, this task may seem easy to implement. However, it requires a choice among the alternative units of analysis under two situations. First, the choice of an individual or household as a unit of analysis. The unit of analysis in a household survey can be either a household, comprising all family members or an individual within a household. At this point, there is a little ambiguity over whether to consider household or individual as a unit for aggregating the user population into groups. Demery (2000), in this regard, recommends a composition of groups by individuals when a service is provided to individuals (e.g. education and health) and by a household if the service is provided to the entire household (e.g. water and sanitation services).

Second, the choice of welfare measure for ranking the users. The most widely-used indicator under welfare measure is 'per capita household expenditure' of the user that awards an equal weight to each member of the household. An alternative to this is 'per adult equivalent household expenditure' which considers higher consumption needs of adults and hence, adults are given a higher weightage than children. However, empirical studies on this account have found no contradictory findings between the two indicators[7] . Therefore, no consistent pattern or no general rule seems to exist in this area. Apart from the welfare measure, grouping of population is also possible by poor and non-poor, rural vs. urban, male vs. female, by ethnicity, religion, age, race, etc.

The distribution of public spending benefits for each group can be obtained by multiplying the average benefit by the number of users of the service in each group.

The procedure mentioned above can now be illustrated algebraically as,

$$X_j = \sum_{i=1}^{n} E_{ij} \frac{S_i}{E_i} = \sum_{i=1}^{n} \frac{E_{ij}}{E_i} S_i \qquad \text{..... (2)}$$

X_j is the benefit incidence accrued to group *j* from government spending on *i* service (S_i)

E_{ij} is the number of ith service users from jth group

$\frac{S_i}{E_i}$ is the unit cost of service *i*

S_i is the total net expenditure on service *i*

Division of X_j (benefit incidence of group *j* by total government expenditure (S_i) provides the share of benefit accrued to group *j* from service *i* utilisation.

Comparison of benefit distribution with benchmark distributions:

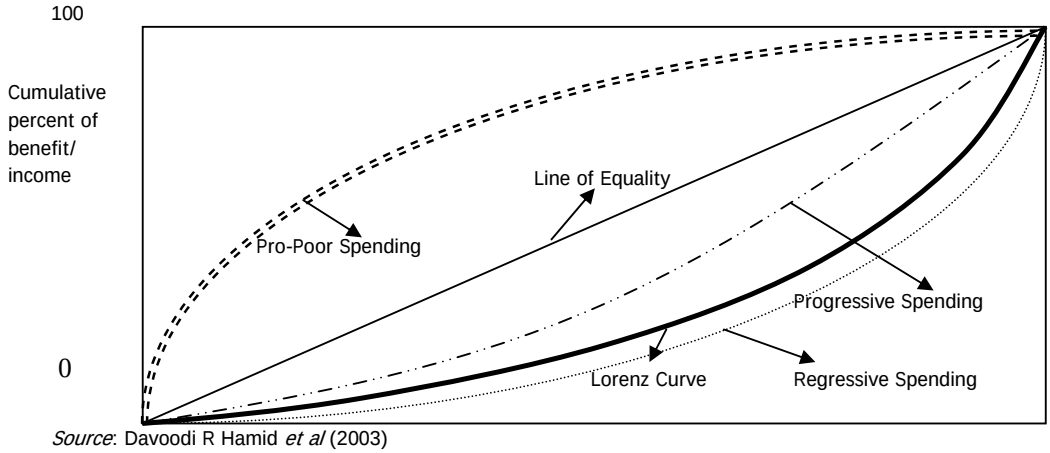
This step is the most important from the policy perspectives. BIA typically concentrates on certain points of benefit distribution. However, Davoodi *et al* (2003) suggest that, the distribution of benefits can be better captured and compared using concentration curves. A concentration curve of benefit plots

the cumulative proportion of individuals (households), ranked based on a certain indicator on the horizontal axis, against the cumulative proportions of benefit received by individuals (households) on the vertical axis. Here, the distribution of income or consumption is summarised usually by the Lorenz Curve. Both the Lorenz Curve and the diagonal line are considered as benchmark distributions for comparing the benefit distribution. Figure – 1 shows three possible concentration curves of benefits (each one for pro-poor spending, progressive spending, and regressive spending), the 45-degree curve and the Lorenz Curve of income or consumption.

Targeted Spending: Benefits from any government expenditure is considered to be well-targeted when the concentration curve of benefits lies above the 45-degree line. The concentration curve of benefits below the 45-degree line results in a negative concentration coefficient and is concave rather than convex. Concavity of the benefit concentration curve indicates that benefits from the government expenditure flow excessively to the bottom group of the population. Benefits from the government expenditure is said to be the opposite when the benefit concentration curve is convex rather than concave.

Progressive Spending: Benefits from government expenditure is considered as progressive when the concentration curve of benefit is above the Lorenz Curve, but below the 45-degree line. The concept of progressivity expects the benefits from government spending to go disproportionately to the bottom group of the population in relative terms. In other words, benefits from government spending should decrease as the level of income or consumption increases. Government spending is said to be regressive when the concentration curve of benefits lies below the Lorenz Curve.

Figure 1: Concentration Curve



Source: Davoodi R Hamid *et al* (2003)

Data

Data is drawn from two different sources. Data on higher education participation and cost recovery is drawn from the unit level records of three NSS rounds i.e., 52nd, 64th and 71st titled as Participation in Education, Participation and Expenditure of Education and Social Consumption: Education, respectively. These surveys were conducted during the periods from July 1995 to June 1996, July 2007 to June 2008 and 1st January to 30th June 2014 respectively in line with the 35th and 42nd rounds of NSS. The purpose

of these surveys are to collect detailed information on the participation of persons aged 5-29 (71st NSS) and 5-24 (52nd and 64th NSS) years in pursuit of education, use of educational infrastructures, and private expenditure on education by households, etc.

Data on Expenditure on higher education is collected from the Combined Finance and Revenue Account (CFRA), at current prices and includes both the revenue and capital accounts for the years 2007-08 and 2014 as part of carrying out a benefit incidence analysis with respect to 64th and 71st NSS rounds respectively. A similar kind of expenditure data is drawn from Analysis of Budgeted Expenditure for the year 1994-96 for conducting benefit incidence analysis for 52nd NSS.

Variables

Elementary Education: Refers to primary and upper primary/middle levels of education (provided by the government and aided institutions). This level of education contains seven years of schooling from 1st to 7th class.

Secondary Education: Refers to secondary and higher secondary levels of education (provided by the government and aided institutions). This involves five years of schooling starting from 8th class/grade.

Higher Education: Refers to diploma/certificate courses (graduation and above), graduate, post-graduate and above levels of education (provided by the government and aided institutions) under general education. This type of higher education includes only non-technical courses i.e., humanities, social sciences, science and commerce.

Cost Recovery: Refers to the course fee that includes tuition fee, examination fee and other compulsory payments.

Income Deciles/Quintiles: NSS data does not capture information on household income. However, the survey captures information on the usual monthly consumption expenditure of each household in details. This variable has been divided by household size in order to obtain monthly per capita consumption expenditure (MPCE). Later the MPCE is ranked (in ascending order) and divided into TEN/FIVE equal parts with the first decile/quintile representing the poorest group and the tenth/fifth decile/ quintile representing the richest group in the order of consumption.

Results and Discussion

The results and discussion of the analysis are presented in two different sections. In the first section, the distribution of benefits using the recent survey is discussed and examined in detail by income deciles, with a further disaggregation (within the framework of income groups) allowed by gender and region (rural/urban). Here, the purpose is to understand the horizontal distribution of benefits for the recent year (2014). The second section deals with the temporal dimension of benefit distribution in terms of understanding the temporal dynamics of incidence. The later section also deals with the marginal incidence of benefits.

Analysing Benefit Incidence for the recent year (2014)

The underlying premise of BIA is that government funds and services should benefit disproportionately the lower socio-economic group (Di Mclntyre, John Ataguba, 2011). Younger (2002) believes that benefits of public expenditure, especially of the social sector should accrue disproportionately to the poor in absolute terms to hold them higher standards than taxes in their being considered well-targeted instruments. Hence, the present section tries to answer the question "who benefits from higher education expenditure?" In order to examine the above premise, the incidence of benefit across income deciles is further disaggregated based on location (urban and rural), gender and level of education. Table 1 depicts the share of benefit from government expenditure on higher education in relation to their proportion to the total population (relevant age group population 18-29).

Income Deciles and Benefit Incidence:

We begin with the share of benefit across income deciles irrespective of location and gender. Considering the rural and urban population combined, the richest deciles benefit the most from higher education expenditure while the poorest the least, thereby indicating the existence of a regressive pattern across income groups with only 8.66 percent benefit of expenditure accruing to the bottom two (poorest) income deciles and around 30 percent benefit to the top two (richest)deciles. Moreover, the share of benefit shows a consistent increase with the household consumption expenditure. In other words, the share of consumption expenditure of income classes seem to be positively associated with the share of higher education benefit and thereby indicating a strong influence of household economic capabilities on the attainment of higher education.

Although, the results ascertain a similar pattern of benefit distribution for regions (rural & urban), the gap between the richest and the poorest income groups is more obvious in respect of rural region. The share of the poorest income decile in rural India (3.38%) indicates a comparative disadvantage of rural poorest, over the urban poorest people (5.38%) and a comparative advantage of the rural richest (19.02%) over the urban richest (10.13%). On the other hand, the share of middle-income groups indicates a benefit incidence of more than their share in the total population.

Benefit Incidence and Population composition:

Lionel Demery (2003) argues for consideration of demographic characteristics of income classes, while interpreting the results of benefit incidence. Because, the composition of relevant age-group population is one of the key factors from the demand side in determining the utilisation of public services. Therefore, the benefit share of higher education expenditure is compared against the share of relevant age-group population of higher education to the total population of each income decile (Please refer to the figures in parentheses of Table-1). The share of the relevant age-group population in the total population represents a normative need of a particular income class. Hence, the share of expenditure benefit is judged against the need of income groups.

On this account, there is no significant discrepancy observed with regard to the share of relevant age-group population at the All India-level across different income levels. However, this does not coincide with the share of benefit accounted for each income decile. The share of bottom income

decile (3.30%) judged against the need (8.79% share in population) appears inequitable. On the contrary, the share of top income decile (15.84%) against its need (11.90%) indicates a disproportionate concentration of benefit at the richest income decile. The above pattern is more obvious in the case of rural India, where the bottom decile enjoys a meagre 3.38 percent share of benefit as against their need (8.86%), while the top decile accounts for a larger share (19.02%) as compared to its need (11.56%). The share of benefit exceeds their share in the total population from 6thdecile of income and continues to increase until reaching to the highest for the richest income class.

On the other side, a different pattern prevails in the case of urban India. Though the share of the benefit for middle and rich income deciles is higher than their population composition unlike rural India, it is the share of middle-income groups which is highly disproportionate to their population *vis-a-vis* the richer groups. Therefore, there is clear evidence for middle-class capture of higher education benefit in urban areas. However, income appears to be one of the important factors influencing the decision of rural households in pursuing higher education and thus, indicating unwillingness of rural poor to afford the burden of direct and indirect cost of higher education. On the contrary, the results pertaining to urban India point out to the willingness to pay and affordability to bear the burden of direct and indirect cost, which may be attributed to a high-value attached to higher education especially, by the urban middle-class population.

Gender and Location:

At the outset, though the female share is lesser than male counterparts at all India-level, it is proportionate to their share in the total population. Hence, there is a weak evidence for female discrimination based on gender. Nevertheless, an analysis based on gender across regions reveals some interesting evidence related to gender disparities. Although the benefit share of females in rural areas is almost increasing, as household consumption expenditure increases, there is evidence for gender-based inequality as female population accounts for a lesser benefit share as compared to their share in the total population (43.50 percent benefit against the need of 47.87 percent). On the contrary, the benefit share of females in urban India does not indicate a systematic association between household income and distribution of benefits; however, it exceeds significantly their share in the total population (53.58 percent of benefit as against the need of 47.55 percent). These differences clearly indicate the existence of a more egalitarian environment in urban India for females in respect of access to higher education than in rural India.

The gender differences in the incidence of benefit across income deciles present an interesting dimension of gender treatment among the poor and rich income groups. Gender discrimination (biased towards male) in access to higher education is more prominent among the poorest income groups than the rich, as females' share of benefit is lesser than their counterparts. An opposite pattern is evident in respect of rich income deciles at all India-level. Specifically, in the urban context, it exceeds not only the share of the population, but also reflects a fair degree of encouragement shown towards female education among the middle class people, an indication of a shift from stereotype thinking. Thus, there is enough evidence to argue that the presence of gender discrimination in higher education is mainly driven by gender bias prevailing among the poor income deciles.

Benefit Incidence across different levels of Education:

Most of the empirical works dealing with benefit incidence suggest that an unequal distribution of benefits is mostly driven by the distribution of high-end public services i.e. higher education, tertiary health care, etc. (Demery, 2003; Mahal, 2005). Because, most of the poor students do not proceed to the higher education mainly due to economic impediments, whereas, rich students can afford the cost of higher education and hence, they are more willing to pursue higher levels of education (Mahal, 2005). Following the above argument, an effort is made to understand the benefit incidence across three different levels of education i.e. Elementary, Secondary and Higher education as part of the general educational system in India.

Table 1: Percentage Distribution of Higher education Benefit by Income Deciles

Income Class	Rural India			Urban India			All India		
	Male	Female	Person	Male	Female	Person	Male	Female	Person
Decile1	1.91 (4.20)	1.47 (4.66)	3.38 (8.86)	2.92 (5.66)	2.46 (4.66)	5.38 (10.32)	1.88 (4.32)	1.42 (4.47)	3.30 (8.79)
Decile2	2.54 (4.69)	1.63 (4.48)	4.18 (9.17)	3.50 (5.40)	3.43 (5.01)	6.94 (10.41)	3.15 (4.93)	2.21 (4.70)	5.36 (9.62)
Decile3	3.01 (4.62)	2.53 (4.68)	5.54 (6.30)	3.99 (4.59)	3.32 (4.68)	7.31 (9.27)	1.92 (3.57)	1.65 (3.45)	3.58 (7.02)
Decile4	4.62 (5.97)	3.46 (5.73)	8.09 (11.70)	4.55 (4.81)	5.04 (4.13)	9.60 (8.94)	4.90 (5.95)	4.12 (5.73)	9.03 (11.69)
Decile5	3.56 (3.77)	3.17 (3.62)	6.73 (7.39)	3.64 (4.59)	5.32 (4.86)	8.96 (9.45)	6.10 (5.38)	4.06 (5.04)	10.17 (10.42)
Decile6	6.84 (5.23)	4.24 (4.99)	11.09 (10.22)	6.62 (5.74)	6.67 (5.27)	13.29 (11.01)	5.56 (4.21)	3.47 (3.69)	9.03 (7.90)
Decile7	7.81 (5.36)	4.30 (4.41)	12.12 (9.77)	5.97 (5.16)	8.18 (4.96)	14.16 (10.12)	7.44 (6.37)	6.79 (5.55)	14.24 (11.92)
Decile8	8.66 (6.48)	6.46 (5.38)	15.12 (11.86)	6.38 (5.56)	7.42 (4.64)	13.81 (10.19)	7.28 (5.69)	6.68 (5.05)	13.97 (10.74)
Decile9	8.05 (5.35)	6.63 (4.83)	14.69 (10.18)	4.74 (4.71)	5.62 (4.53)	10.37 (9.24)	7.49 (5.30)	7.94 (4.69)	15.43 (10.00)
Decile10	9.44 (6.45)	9.57 (5.11)	19.02 (11.56)	4.06 (6.23)	6.06 (4.82)	10.13 (11.05)	7.08 (6.50)	8.75 (5.40)	15.84 (11.90)
Total	56.49 (52.13)	43.50 (47.87)	100 (100)	46.41 (52.45)	53.58 (47.55)	100 (100)	52.84 (52.23)	47.15 (47.77)	100 (100)

Source: Authors' calculation based on NSS 71st round and CAG (2013-14).

Note(s): Figures in parentheses indicate the proportion of relevant age-group population of higher education to the total population.

A comparative analysis of benefit incidence reveals two major findings. First, all India-level, the share of the benefit accruing from public spending on education with regard to bottom income deciles keeps on decreasing, if we move from elementary to higher education. The share of benefit for bottom quintile is relatively higher for elementary education and lower for higher education compares to upper-income groups. An opposite pattern of distribution is observed in the case of top income deciles.

Second, the persisted inequalities in the distribution of educational benefits appear to be enormously noticeable for rural population across all the levels of education and targeting is less-

effective in higher education, thus, indicating that income plus distance to public education help in explaining the distribution of the benefits.

Table 2: Percentage Distribution of Education Expenditure Benefit across Different Levels of Education

Region	Top Income Decile			Lower Income Decile			All		
	Male	**Female**	**Person**	**Male**	**Female**	**Person**	**Male**	**Female**	**Person**
					Elementary Education				
Rural	2.15	1.79	3.93	7.01	7.09	14.10	52.54	47.46	100
Urban	-0.86	-0.47	-1.33	10.79	10.55	21.34	50.97	49.03	100
All	0.72	0.65	1.37	8.24	7.82	16.06	52.30	47.70	100
					Secondary Education				
Rural	4.85	4.77	9.62	4.02	3.65	7.66	53.58	46.42	100
Urban	1.99	1.51	3.51	5.13	5.60	10.74	49.83	50.17	100
All	3.40	2.85	6.25	4.17	3.91	8.07	52.73	47.27	100
					Higher Education				
Rural	9.44	9.57	19.02	1.91	1.47	3.38	56.49	43.51	100
Urban	4.06	6.06	10.13	2.92	2.46	5.38	46.42	53.58	100
All	7.08	8.75	15.84	1.88	1.42	3.30	52.85	47.15	100

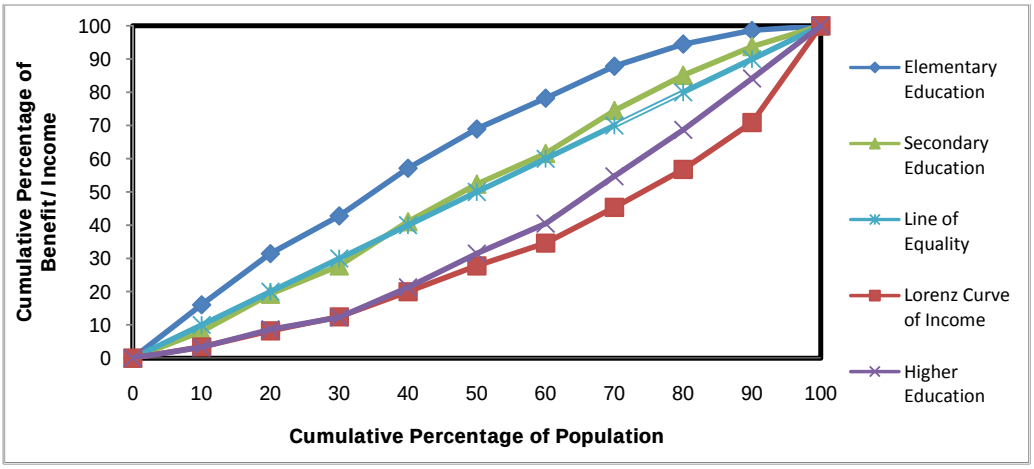
Source: Authors' calculation based on NSS 71st round and CAG (2013-14).

Progressivity and Targeting of Education Expenditure

Benefit incidence of education expenditure can be better captured and explained through the concentration curve. They help in understanding the extent of progressivity and targeting of education expenditure. We present three different graphs, each one for Rural, Urban and All India. Each graph includes five different curves. Three different concentration curves that represent the benefit share of three different levels of education and a line of equality (45-degree line) and Lorenz Curve that represents the distribution of consumption expenditure across income deciles.

Population distribution based on income is plotted on the horizontal axis and the share of the benefit of education expenditure & income/consumption on the vertical axis of Graph -1. Public Expenditure is said to be well-targeted, if the concentration curve of benefit lie above the line of equality, impartial if it is on the line of equality and considered to be progressive of it stay above Lorenz Curve.

Graph 1: Concentration curve of Benefit Incidence of Education expenditure for All India

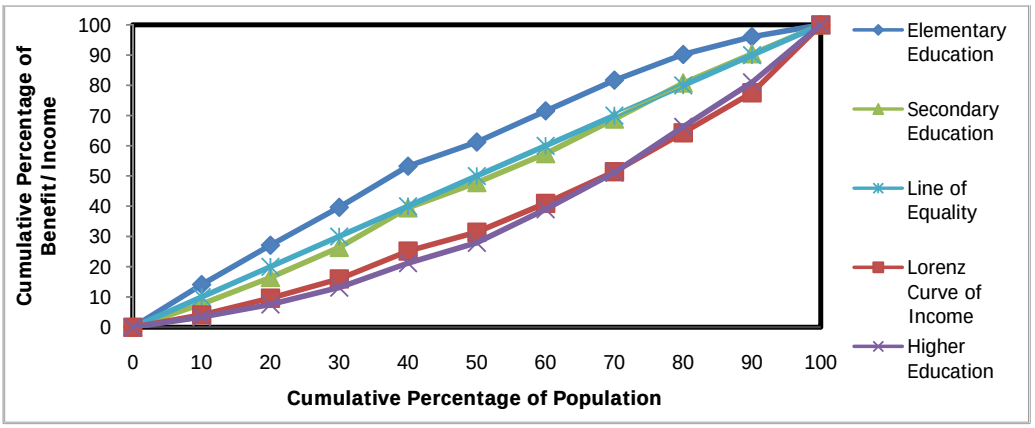


Source: Authors' preparation using NSSO and CAG Data.

The graph depicts that Elementary education at the All India (Rural & Urban) is well-targeted with the poorest people in the society accounting for a larger share in the benefit. In the case of secondary education, the concentration curve almost lies along the line of equality and hence, the benefit is equitably distributed. In other words, the distribution of benefit is impartial and progressive but not well-targeted. It is important to note that the concentration curve lies below the line of equality but above the Lorenz Curve for higher education. This indicates that though the top income deciles reap the benefit disproportionately, benefit distribution cannot be considered regressive. Ideally, the benefit from public expenditure should accrue disproportionately to the poor. However, the results of this analysis indicate a well-targeted elementary education; an impartial but progressive distribution of secondary expenditure; and progressive but ill-targeted higher education expenditure. More or less, a similar pattern can be observed for Rural India (Graph 2).

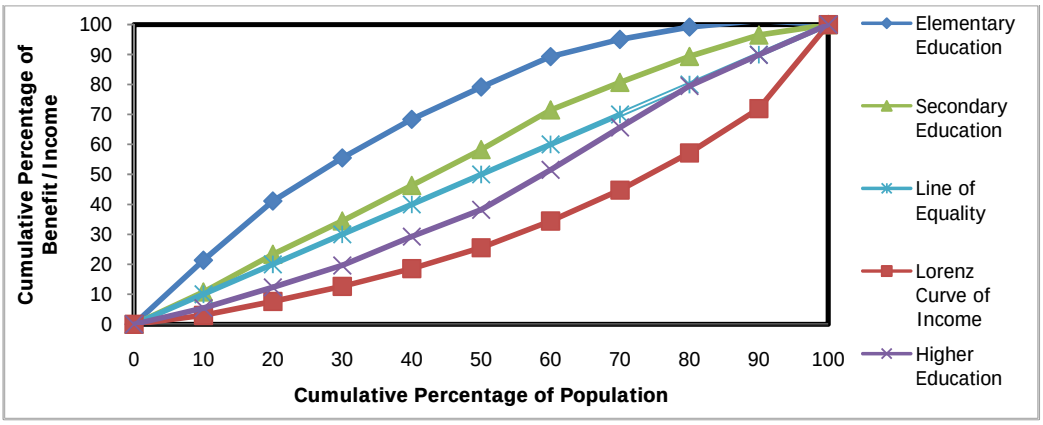
A slightly different pattern is observed with regard to progressivity and targeting of education expenditure for Urban India (Graph 3) as against that of All India. In respect of urban India, expenditure on elementary and secondary education is not only progressive but also very well-targeted. Hence, the concentration curves representing these two types of education stay above the line of equality, indicating that the benefit of elementary and secondary education expenditure is accruing to the poor economic groups more than their proportion in the respective age-group population, while the curve representing higher education expenditure benefit lies under the 45 degree line, but above the Lorenz curve, indicating a progressive higher education expenditure.

Graph 2: Concentration curve of Benefit Incidence of Education expenditure for Rural India



Source: Authors' preparation using NSSO and CAG Data

Graph 3: Concentration curve of Benefit Incidence of Education expenditure for Urban India



Source: Authors' preparation using NSSO and CAG Data

Benefit incidence over time and Marginal Gains

The standard Benefit Incidence Analysis captures the average benefit of government spending at a given time point and describe the existing distribution of benefits. The findings of the average incidence at one point of time sometimes may mislead the policy decisions as they do not typically provide the information on incidence of benefits in the case of expansion or contractions in public spending. Its inability to explain the distribution of marginal benefits from a small change in expenditure or program expansion is considered as one of the severe limitations of this approach. Hence, analysis of marginal benefits often is equal or greater interest in assessing public policy reforms (Walle, 1998). If the group-specific benefit incidence stay at the same rate even with the expansion or contraction of public expenditure, the distribution of benefit is said to be 'homogenous' otherwise, 'non-homogeneous' (Peter Lanjouw, Martin Ravallion, 1999). In this connection, a political economy model, postulated by Peter Lanjouw and Martin Ravallion (1999), assumes that the non-homogeneity of distribution occurs when the poor capture the benefit only at certain times in the program's history. If the non-poor find it easy to capture the benefit only in the initial stages of the program, it is termed as 'late capture' and benefit

occurrence in the later stages of program's history is termed as 'early capture'. Variation in the timing of benefit capture by the poor arise partly due to (a) inability of the Governments to target perfectly (b)targeting only the poor may not be a politically-feasible option for the Governments and (c) participation cost of publically-provided social programs *(Ibid)*.

Change in the Incidence of Benefits over time:

Comparison of the incidence, at two or more time points, with a comparable data is one of the ways for understanding the incidence of benefit when there is a change in aggregate participation (Walle, 1998). Therefore, data on benefit incidence, of different levels of education for three different points of time,(i.e. 1995-96, 2007-08 and 2014) has been compiled as part of understanding how the changes in spending affect the distribution of benefit across different income groups over time. Participation in Indian higher education has been expanded at a very fast rate during the reference period of the study i.e. 1995-96 to 2014-15. The enrolment during this period has increased four times from 65,74,005 in 1995-96 to 2,65,85,437 in 2014-15 and accounts for 7.64 percent of Annual Average Growth Rate (GOI, 2014-15). Does this enormous expansion impact/alter the distribution of benefits of different income groups over time? If so, does this rapid growth in participation automatically percolate the benefits to the poor? These pertinent questions outline the focus of this section.

Table 3 gives a summary of the benefit accruing to the richest and the poorest people (captured by income quintiles) on three points for three levels of education with rural and urban disaggregation. The incidence of spending is leaning towards the poor income groups (gradually) over time. For instance, the share of poorest quintile in the total higher education expenditure has increased from 1.23 percent in 1995-96 to 5.04 percent in 2007-08 and to 8.67 percent in 2014 for all India. This pattern is also consistent for both male and female cutting across the regional lines. In a similar way, the share of higher education benefit has increased from 2.79 to 7.56 percent and 2.36 to 12.32 percent for rural and urban India, respectively for the years 1995-96 and 2014 (table 4). Hence, expansion in participation seems to have resulted in percolation of benefits to the poor over time. And there is non-homogeneity of benefit distribution across the time points studied due to 'late capture' of benefits by the poor. In other words, the group-specific benefit incidence rate is varying with the expansion of public expenditure on higher education in India.

However, the increased share of benefit over time, also accompanied by a consistent increase in the share of the eligible population (please refer to figures in parentheses of table 3) for the poor income groups indicating the observed increase of benefits is not radical in nature. In addition, the private sector in India is tightening its grip on the provision of higher education over the recent years (share of the private sector in the total enrolment has increased from 31 percent in 2007-08 to 45.4 percent in 2014-15 (GOI, All India Survey of Higher Education, 2014-15). It is generally believed that the proliferation of private education caters to the needs of the affluent sections[8] (Tilak, 2018). If this argument holds true, there must be a less dependency of higher income groups on public higher education. However, the analysis-based findings suggest that higher income quintile still disproportionately benefit from the public higher education expenditure and hence, continues to depend on public education in spite of a rapid expansion of private education. Therefore, demand for public

higher education among the privileged class has not saturated in India. This phenomenon in turn, proves an effectively-maintained educational inequality as argued by proponents of Maximally Maintained Inequality (MML) and the degree of inequality is more prominent in rural India in comparison with the urban areas (please refer to table 4).

Table 3: Percentage Share of Education Expenditure between 1995-96 and 2014

Periods	1995-96			2007-08			2014		
Income Classes	**Elementary Education**								
	Male	**Female**	**Total**	**Male**	**Female**	**Person**	**Male**	**Female**	**Person**
Poorest	10.72 (12.03)	6.98 (11.61)	17.71 (23.64)	14.60 (13.70)	13.19 (12.85)	27.80 (26.56)	16.22 (13.71)	15.23 (12.85)	31.46 (26.56)
Richest	9.25 (8.28)	7.17 (6.95)	16.43 (15.23)	3.97 (7.40)	3.35 (5.69)	7.33 (13.09)	2.95 (7.40)	2.57 (5.69)	5.52 (13.09)
	Secondary Education								
Poorest	4.96 (8.28)	1.56 (7.15)	6.52 (15.42)	6.95 (10.12)	5.37 (9.46)	12.32 (19.58)	10.66 (11.68)	8.60 (10.59)	19.26 (22.27)
Richest	21.40 (13.11)	14.20 (10.22)	35.60 (23.33)	13.47 (10.28)	9.57 (7.88)	23.04 (18.16)	7.52 (9.63)	7.37 (7.69)	14.90 (17.32)
	Higher Education								
Poorest	0.97 (7.44)	0.26 (8.16)	1.23 (15.60)	3.21 (7.97)	1.82 (8.98)	5.04 (16.95)	5.03 (9.25)	3.63 (9.17)	8.67 (18.42)
Richest	40.75 (13.57)	28.36 (11.09)	69.12 (24.66)	23.58 (11.87)	20.75 (9.64)	44.33 (21.50)	14.58 (11.81)	16.70 (10.09)	31.28 (21.90)

Source: Authors' preparation using NSSO and CAG and MHRD Data

Note (s): Figures in parentheses indicate proportion of population in respective age groups

The benefit distribution across different levels of education reiterates that the unequal distribution of higher education benefits is mainly driven by inequality at the higher education-level. Hence, the gains of the poor income quintiles at lower levels of education overwhelmed by the disproportionate allocation of benefit to the rich income groups at higher education-level as observed by Mahal (2005). However, one cannot undermine the significance of equitable attainment of lower levels of education because the inequalities in the primary and elementary education are one of key determinants of unequal participation in higher education (Tilak, 2015).

Table 4: Benefit Incidence of Higher education expenditure across regions over time

Year	1995-96 (52nd Round)			2014 (71st Round)		
			Rural India			
Gender	**Male**	**Female**	**Person**	**Male**	**Female**	**Person**
Poorest	2.22 (6.99)	0.56 (8.01)	2.79 (15.00)	4.45 (8.89)	3.10 (9.14)	7.56 (18.05)
Richest	43.60 (12.98)	20.49 (11.81)	64.09 (24.78)	17.49 (11.80)	16.20 (10.21)	33.71 (21.74)
			Urban India			
Poorest	1.59 (8.31)	0.77 (8.69)	2.36 (16.99)	6.42 (10.96)	5.89 (9.67)	12.32 (20.73)
Richest	29.76 (13.02)	21.83 (9.53)	51.60 (22.56)	8.8 (10.94)	11.68 (10.44)	20.50 (20.29)

Source: Authors' computation using NSSO and CAG and MHRD Data

Note (s): Figures in parentheses indicate the proportion of population to the respective age-groups

Marginal Gains:

While comparison of average incidence for three different time points explains the rate of change in benefit incidence, it is possible to estimate the marginal gains for each income class with the changes in overall program size. A preliminary attempt is made to understand the marginal gain on benefit incidence of education expenditure for each economic quintile across different education levels. This exercise gives a nominal gain of each income quintile for one time point to another. Marginal Benefit Incidence (MBI) is derived with the help of a formula given below (Walle, 1998).

$$\boldsymbol{MBI_{ji}} = \frac{(E_{jit+1} - E_{jit})}{(E_{it+1}) - E_{it}} \qquad \text{..... (3)}$$

Where, MBI_{ji} is the marginal benefit incidence of j[th] group from i[th] level of education

$\boldsymbol{E_{jit+1}}$ is the share of j[th] group in the i[th] level of education expenditure for the recent time point

$\boldsymbol{E_{jit}}$ is the share of j[th] group in the i[th] level of education expenditure for the first/past time point

$\boldsymbol{E_{it+1}}$ is the total education expenditure on i[th] level of education for the second/recent time point

$\boldsymbol{E_{it}}$ is the total education expenditure on i[th] level of education for the first/ past time point.

The results of the marginal benefit incidence analysis are presented in table 5 for different income quintiles. The marginal gains of different income quintiles are compared across three levels of education for three different time groups (table 5). It is expected that while all the sections of the society benefit from the expansion of public education, the rate of benefit for the poor sections of the population would be expected to be higher than non-poor sections from the perspective of inclusive growth (Tilak, How Inclusive is Higher Education in India?, 2015). In the absence of relative advantage of the poor, expansion of public education may still benefit the poor with static or even increasing inequalities in the benefit distribution. In other words, the disproportionate gains of poor from the public education can only mitigate the prevailed inequality. The findings suggest that the marginal benefit of lower income groups across all the time clusters is significantly higher than of upper income quintiles

and systematically reduced for every increase in the income levels. However, the difference between the poor and rich income quintiles is very sharp for the period from 1995-96 to 2007-08, as compared to the period from 2007-08 to 2014, partly because the number of years in the former time range are more compared to the later, and marginal gains are captured in nominal terms. Surprisingly, the marginal gain of females is considerably higher than males and is consistent across various time groups. Although a similar pattern is observed for both elementary and secondary education, the marginal gains are in a descending order from higher education to elementary education through secondary level. This pattern marks a transition of benefits from the rich to the poor and largest benefit accrues to the least income section of the population.

Table 4: Marginal Benefit Incidence of Education Expenditure by Income Quintiles

Income Classes	1995-96 to 2007-08			2007-08 to 2014			1995-96 to 2014		
	Male	Female	Person	Male	Female	Person	Male	Female	Person
Elementary Education									
Quintile 1	1.36	1.89	1.57	1.11	1.15	1.13	1.51	2.18	1.78
Quintile 2	1.03	1.30	1.14	1.00	1.05	1.02	1.03	1.37	1.17
Quintile 3	0.99	1.10	1.04	0.92	0.94	0.93	0.91	1.04	0.97
Quintile 4	0.75	0.81	0.78	0.92	0.99	0.95	0.69	0.80	0.74
Quintile 5	0.43	0.47	0.45	0.74	0.77	0.75	0.32	0.36	0.34
Secondary Education									
Quintile 1	1.40	3.44	1.89	1.53	1.60	1.56	2.15	5.52	2.95
Quintile 2	1.25	2.08	1.49	1.07	1.48	1.24	1.34	3.07	1.85
Quintile 3	0.95	1.45	1.11	0.90	1.08	0.97	0.85	1.56	1.08
Quintile 4	0.89	1.08	0.96	0.85	0.98	0.91	0.75	1.05	0.87
Quintile 5	0.63	0.67	0.65	0.56	0.77	0.65	0.35	0.52	0.42
Higher Education									
Quintile 1	3.32	6.85	4.08	1.56	1.99	1.72	5.19	13.63	7.01
Quintile 2	2.05	4.56	2.53	1.24	2.00	1.50	2.54	9.14	3.80
Quintile 3	1.51	2.09	1.68	1.30	1.50	1.37	1.95	3.15	2.30
Quintile 4	1.31	2.16	1.57	0.91	1.13	1.00	1.19	2.44	1.57
Quintile 5	0.58	0.73	0.64	0.62	0.80	0.71	0.36	0.59	0.45

Source: Authors' computation using NSS (various rounds), CAG and MHRD data.

In terms of the policy, the findings of standard/average benefit incidence may call for a reduction in the allocation of expenditure for higher education as higher proportion of the higher education benefits accrues to economically affluent section. Such policy suggestions may be entirely deceptive in understanding the role of government in extending the equitable opportunities for less-privileged segments of the society. It is clear from the marginal benefit incidence that expansion of higher education warrant higher proportion of benefits for the poor, and hence, even a minute effort towards retrenching its expansion would lead to a humongous loss for the poor.

Conclusions

We have tried to explain the distributional impact of higher education expenditure based on income classification of service users. While many countries across the world have inequalities of various kinds, peculiar role of caste hierarchies and their continuing hold in determining the extent of inequality separates India from the rest of the world(Jean Dreze, 2013).Although the Indian society cannot be conceptualised(strictly) in terms of simple class control or the rule in explaining the disparities, scholars have, in principle formed a consensus on intermesh of class with other structures of hierarchies (Bettlle 1966; Rao 1989; Francine R Frankel and Rao 1989).In fact, stratification based on class, caste and gender reinforces, and even worsens, the disparities due to their mutual reinforcement and hence, thereby subjecting those at the bottom of these multiple layers of disadvantage to the extreme disempowerment(Jean Dreze, 2013).Therefore, it is widely believed that economic and social factors determining inequality in India do not function in isolation. And this peculiarity does not necessarily undermine the role of class framework in explaining the incidence of public higher education expenditure in India.

When it comes to the findings of the study, the estimated benefits of the recent household survey extensively exceeds to the richest income decile, compared to the poorest income decile, even after accounting for eligible age-group characteristics, which suggest that there is a substantial inequality in the way government expenditures are distributed across the income groups. Moreover, a positive association between higher education benefits and household consumption expenditure indicates that higher education, by nature, is an elite field and it presupposes the prevalence of some amount of economic, social and cultural capital (Deshpande, 2006).This further also indicates the involvement of a sizeable expenditure on the part of the household in the form of direct and opportunity costs even to benefit from government services. Addition of every other sources of disparity, such as gender and region to income categorisation, indicates that the group faced with multiple layers of disparity is more vulnerable in terms of availing benefit from public higher education. For example, rural females of lower-income group avails relatively lesser benefit compare to their counterparts in urban areas. Hence, as Mahal (2005) observed, gender and income plus distance to public services helps in explaining the distribution of higher education expenditure even in recent times(Mahal, 2005).

Comparison of the distributional impact of expenditure on different levels of education indicates a well-targeted elementary, favourably distributed secondary and a progressive but ill-targeted higher education. There exists a linear pattern in the distribution of benefits from lower levels of education to higher levels with no single exception. Hence, the analysis-based findings reiterate the argument that the prevailing distributional inequities are mainly driven by high-end public services. Therefore, greater attention is required for promoting equality in the allocation of higher education subsidies. In this regard, eradicating inequalities prevailed in lower levels of education (primary and secondary) could be a primary but the noteworthy measure has given the association between inequalities in lower levels of education and that of higher education. It is also noteworthy to mention that the expenditure allocation policies of the government, that views reduction of funds to a particular level of education as the only feasible way in order to make provision of greater funds to others needs

to be re-looked as provision of equitable educational opportunities call for eliminating inequalities in all the levels of education.

Another policy-relevant observation that emerged from the findings of the study is that the percolation of benefits to the poor due to the expansion of higher education over time. In fact, the marginal gains for lower-income groups associated with expansion are substantially higher than higher-income groups. This pattern implies that expansion of public higher education has begun to provide though rather slowly, egalitarian opportunities to the poor and hence, even a minute effort towards curtailing its expansion, would lead to a humongous loss for the poor.

Finally, participation in education is the central element for analysing the incidence of public higher education expenditure as per the methodology adopted in the study. The study does not presume that the instruments of exclusion are built into the system of public provision of education deliberately. Uneven socio-economic conditions and absence of concrete policy measures for ensuring egalitarian opportunities together have caused unequal participation of higher education for various segments of the population. A systematic investigation of factors determining higher education participation in India, however, is not aligned within the scope of this paper.

End Notes

[1] However, Sen is not completely satisfied with the notion of targeting due to its inherent direct and indirect costs which cause type 1 error in the selection of potential beneficiaries.

[2] Cultural capital exists in three forms: in the embodied state, i.e. in the form of long-lasting dispositions of the mind and body; in the objectified state, in the form of cultural goods (books, dictionaries etc.); in the form of institutionalized state, a form of educational qualification. Social capital is the aggregate of the actual or potential resources which are linked to the possession of a durable network of more or less institutionalised relationships of mutual acquaintance and recognition.

[3] Education cannot be mortgaged due to its uncertain returns and is embodied in the mind of the individual.

[4] RRA makes certain assumptions (Breen, 1999) such as People's value regarding education does not vary across social classes; the average academic ability and economic resources do vary among the social classes; there are also variations in educational aspirations across social classes; the desire to avoid a downward social class mobility is stronger than pursuing an upward social mobility

[5] However, all the theories mentioned above consider school or education system as a passive agent with a uniform practice of reproduction understating the role of individual meritocracy, the value of competition, the large opportunities generated by capitalism that may help to break the structural inequalities of the society.

[6] See Younger (2002) for limitations.

[7] See for details, Shan and Younger (1999 and 2000).

[8] Partly due to the wide spread perception that the private education is qualitatively superior compare to publically provided education.

References

Alon, S (2009). The Evolution of Class Inequality in Higher Education: Competition, Exclusion and Adaption. *American Sociological Review*, 731-755.

Atkinson, A B (2002). Increased Income Inequality in OECD Countries and Redistributive Impact of the Government Budget. Helsinki, USA: World Institute for Development Economic Research, United Nations University.

Bettille, A (1966). *Caste, Class and Power.* Bombay: Oxford University Press.

Bose, N K (1965). Class and Caste. *Economic and Political Weekly*, 1337-1340.

Bourdieu, P (1986). The Forms of Capital. In R J, H*andbook of Theory and Research for the Sociology of Education*. Westport CT: Greenwood. Pp 241-58.

Bowels, S (1972). Schooling and Inequality from Generation to Generation. *Journal of Political Economy*, S219-S251.

Breen, R (1999). Beliefs, Rational Choice and Bayesian Learning. *Rationality and Society*, 463-79.

Campos, J E (2001). What is Public Expenditure Management. *The Governance Brief ADB*, 1-4.

Chu Ke-Young, Hamid R Davoodi and Sanjeev Gupta (2000). Income Distribution and Tax and Government Social Spending Policies in Developing Countries. Helsinki, USA: World Institute for Development Economic Research, United Nations University.

Creedy, J (1994). Financing Higher Education: Public Choice and Social Welfare. *Fiscal Studies*, 87-108.

Cuenca, J S (2008). *Benefit Incidence Analysis of Public Spending on Education in the Philippines: A Methodological Note*. Makati City, Philippines: Philippine Institute of Development Studies.

Demery, L (2000). Benefit Incidence: A Practitioner's Guide. *Benefit Incidence: A practitioner's Guide*. Washington, USA: Wold Bank, poverty and Social Development Group.

Demery, L (2003). Analyzing the Incidence of Public Spending. In L A Fracois Bonrguignon (ed), *The Impact of Economic Policies on Poverty and Income Distribution: Evaluation Techniques and Tools*. New York: Oxford University Press. Pp 40-68.

Deshpande, S (2006). Exclusive Inequalities: Merit, Caste and Discrimination in Indian Higher Education Today. *Economic and Political Weekly*, 2438-44.

Di Mclntyre, John Ataguba (2011). How to Do or Not to Do a Benefit Incidence Analysis. *Health Policy and Planning*, 170-82.

Francine R Frankel and M S A Rao (1989). *Dominance and State Power in Modern India: Decline of Social Order.* New Delhi: Oxford University Press.

Fuller M, D L (1997). *Statistics Workbook for Social Science Students.* United Kingdom: Oxford.

GOI (1995-96). *Analysis of Budgeted Expenditure on Education.* New Delhi: MHRD.

———— (2007-08). *Analysis of Budgeted Expenditure on Education.* New Delhi: MHRD.

———— (2014-15). *All India Survey of Higher Education.* New Delhi: Ministry of Human Resource Development.

———— (2014-15). *Annual Report.* New Delhi: University Grants Commission.

———— (2017-18). *All India Survey of Higher Education.* New Delhi: Ministry of Human Resource Development.

———— (2010-11). *Combined Finance and Revenue Accounts of Centre and States.* New Delhi: Comptroller and Auditor General.

Hamid R Davoodi, Erwin R Tiongson, Sawitree S Asawanuchit (2003). How Useful Are Benefit Incidence Analysis of Public Education and Health Spending? *Income Distribution and Tax and Government Social Spending Policies in Developing Countries*. USA: International Monetary Fund.

Jahid Asgar and Mudassar Zahar (2012). A Benefit Incidence Analysis of Public Spending on Education in Pakistan using PSLM data. *The Lahore Journal of Economics*, 11-136.

Jean Dreze, A S (2013). *An Uncertain Glory: India and Its Contradictions.* London/New Delhi: Allen Lane/Peguin Books.

Jenny Chesters and Louise Watson (2013). Understanding the Persistence of Inequality in Higher Education: Evidence from Australia. *Journal of Education Policy*, 198-215.

Lekha S Chakraborty, Y S (2013). *Analyzing Public Expenditure Incidence on Health Care: Evidence from India.* New York: Levy Economic Institute.

Lucas, S R (2001). Effectively Maintained Inequality: Education Transitions, Track Mobility, and Social Background Effects. *American Journal of Sociology*, 1642-90.

Mahal, A (2005). Policy Implications of Distribution of Public Subsidies on Health and Education: The Case of Karnataka, India. *Comparative Education Review*, 552-74.

McGuire (1979). The Distribution of Subsidies in California Public Higher Education. J*ournal of Human Resources*, 343-53.

Meerman, J (1979). *Public Expenditure in Malaysia: Who Benefits and Why?* New York: Oxford University Press.

Mitra, A (2015). Public Spending in Higher Education in India: A Benefit Incidence Analysis. *Higher Education for the Future*, 71-91.

Mukherjee, R (2000). Caste in Itself, Caste and Class, or Caste in Class. *Journal of World-Systems Research*.

Owen O Donell, E V (2008). *Analyzing Health Equity Using Household Survey Data: A Guide to Techniques and Their Implementation.* Washington DC: The World Bank.

Peter Lanjouw amd Martin Ravallion (1999). Benefit Incidence, Public Spending Reforms and the Timing of Program Capture. *The World Bank Economic Review*, 257-73.

Pscharopolous, G (1993). A Cost-Benefit Analysis of Educational Investment. *Economics of Education Review*, 293-98.

Raftery Adrian E and Michael Hout. (1993). Maximally Maintained Inequality: Expansion, Reform, and Opportunity in Irish Education, 1921-75. *Sociology of Education*, 41-62.

Rao, K R (1989). Understanding the Indian State: A Historical Materialist Exercise. In S J Zoya Hassan (ed), *The State, Political Process and Identity: Reflections on Modern India*. New Delhi: Sage Publications. P 89.

NCEAR (2013). *India Human Development Survey II: User Guide.* New Delhi: National Council For Applied Economic Research.

Samuel Bowels, H G (2002). Schooling in Capitalistic America Revisited. *Sociology of Education*, 1-18.

Samuel Bowles, Herbert Gintis (2002). The Inheritance of Inequality. *Journal of Economic Perspectives*, 3-30.

Samuel, L R (2001). Effectively Maintained Inequality: Education Transition, Track Mobility and Social Background Effects. *American Journal of Sociology*, 1642-90.

Selowsky (1979). *Who Benefits from Government Expenditure? A Case Study of Columbia.* New York: Oxford University Press.

Sen, A (1995). The Political Economy of Targeting. In D V Need (ed), *Public Spending and the Poor*. London, and Baltimore: The World Bank, John Hopkins University Press. Pp 11-23.

Srinivas, M N (1964). *Caste in Modern India and Other Essays.* Bombay: Asia Publishing House.

Stephen Younger, S E (2000). Expenditure Incidence in Africa: Microeconomic Evidence. *Fiscal Studies*, 329-47.

The World Bank (2005). *India and the Knowledge Economy Leveraging Strengths and Opportunities.* Washington, DC: World Bank Finance and Private Sector Development Unit.

Tilak, J B (2015). How Inclusive is Higher Education in India? *Social Change*, 185-223.

———— (2018). *Dilemmas in Reforming Higher Education: Writings of Jandhyala B G Tilak.* New Delhi: Oriental Black Swan.

Walle, D V (1998). Assessing the Welfare Impacts of Public Spending. *World Development*, 365-79.

Younger, S D (2002). Public Social Sector Expenditure and Poverty in Peru. In C Morrisson (ed), *Education and Health Expenditure and Development: The cases of Indonesia and Peru*. Paris: OECD. Pp 83-151.

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