

Economic Analysis of Financing Higher Education in India

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Abstract

Educational cost consists of two major components – private cost and institutional cost (Tilak, 1985). Institutional cost of education mainly refers to government spending on education. Private cost of education refers to resources incurred on education by students themselves and/or by parents, any other household member, and/or any of their relatives. The latter is also called household expenditure on education. Both institutional and private costs of education entail visible and opportunity costs. The institutional visible cost consists of two major components i.e., recurring and non-recurring expenses, whereas tuition and non-tuition expenses are the major components of private visible cost. The opportunity cost, on the other hand, denotes the relationship between scarce resources and choice. The institutional opportunity cost refers to the loss of potential gain from investment on other alternative sector, when governments choose to invest on education. Similarly, the private opportunity cost refers to foregone income when students choose to participate in the lab or market instead of pursuing education. Investment on education from both the government and household sources assumes importance given their magnitude, nature and characteristics. Although public investment provides educational facilities, utilization of these facilities is determined by household investment (Tilak, 2002). Hence, both individual and institutional investments are imperative for from the view point of optimal allocation of resources to education.

Key Words: educational expenditure, higher facilities, investment, resources, utilization

Introduction

There is a subtle difference between educational cost and educational expenditure. Educational cost is a much broader term than educational expenditure. Cost can include certain imputed aspects other than expenditure, such as opportunity cost. Expenditure can be expressed only in monetary terminology, whereas, cost is expressed in terms of both monetary and non-monetary/real/physical terminology (Tilak, 1985). While data on visible cost of education can be easily quantifiable, estimation of opportunity cost involves highly complicated procedures. Hence, the present study aims at examining certain important issues pertaining to visible cost of education in the context of higher education in India. To state otherwise, the present study intends to systematically analyze some of the pertinent issues related to higher educational expenditure in India.

Fig1.1 Taxonomy of Educational cost

The taxonomy of educational cost is primarily divided into Institutional Costs and Private Costs. Institutional costs are those borne by the education provider, which are further categorized as recurring (salaries, supplies) or non-recurring (buildings, equipment). Private costs are those incurred by individuals and include both visible costs (tuition, books, transport) and invisible costs, most significantly, the foregone earnings from not working.

Institutional Costs

Visible / Direct Costs: The costs that are directly and obviously associated with the institution.

Recurring Costs: Expenses that occur regularly.

- Teachers' and other staff salaries
- Scholarships and stipends
- Depreciation
- Other expenditures

Non-Recurring Costs: Expenses for one-time purchases or major projects.

- Buildings
- Furniture
- Equipment

Invisible / Indirect Costs: The costs that are not immediately apparent.

- Damage to the institution.
- Private Costs

Visible / Direct Costs: The out-of-pocket expenses for the student and family.

Tuition Cost: Fees paid to the institution.

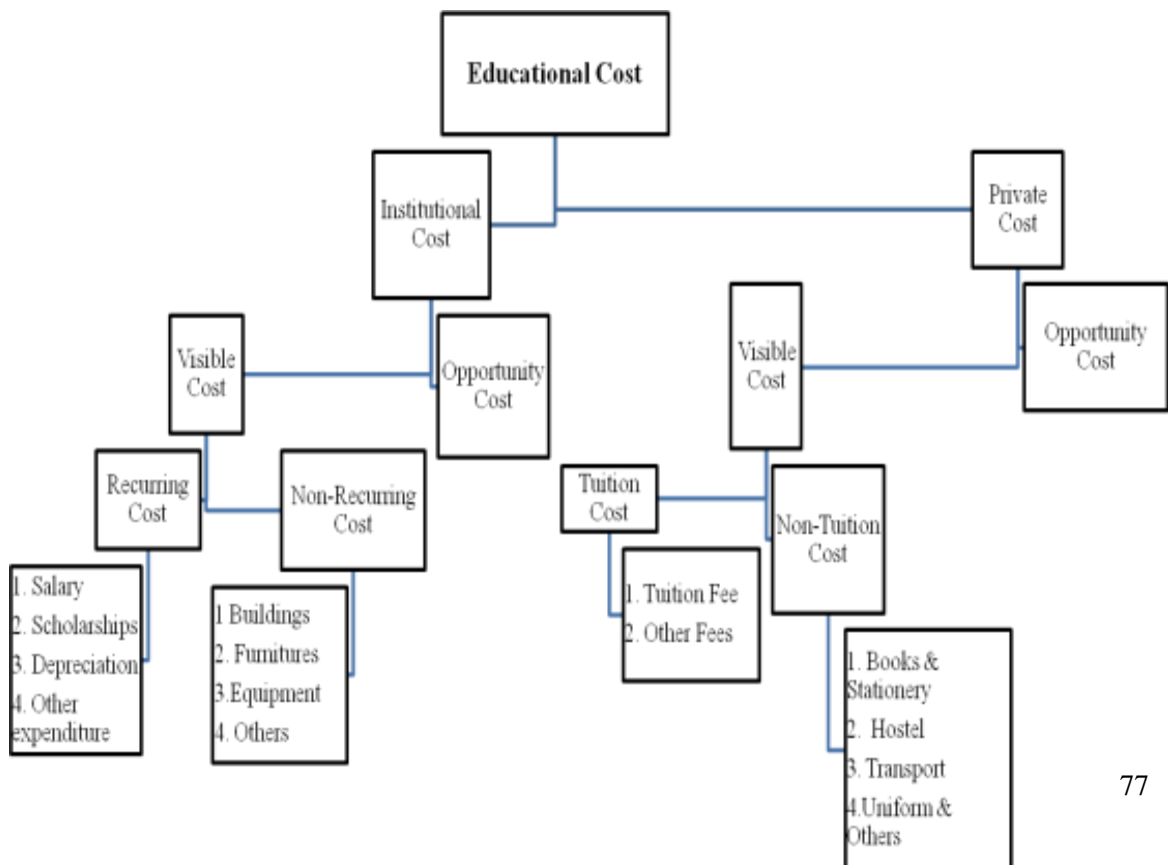
- Tuition fees
- Other fees

Non-Tuition Cost: Expenses related to individual maintenance.

- Books and stationery
- Hostel fees
- Transport
- Uniforms

Invisible / Indirect Costs: The costs that are not paid with money.

Foregone Earnings: The income an individual gives up by choosing to study instead of work.



Statement of Problem

Higher education was elitist with about three-quarters of total expenditure borne by the government in the early decades of independent India (Tilak, 1993). Higher education is perceived as one of the most important avenues of economic and social mobility in the contemporary economic context. As a result, the system of higher education has witnessed an enormous expansion after the 1990s, in terms of number of universities, institutions and enrolment (Prakash, 2007). These marked changes have generated their own set of concerns with regard to financing higher education in India. They include, but not limited to issues, related to inadequacy of public resources, exploration of alternative financing sources, privatization of higher educational facilities, equitable access, etc.

Democratization and massification of higher education demand an enormous amount of public resources on consistent basis, in order to meet the financial requirements of the system in respect of most of the countries. The nature of higher education (as a quasi-merit good), its vulnerability to market failures, production of positive externalities and provision of equal opportunities (educational) for people from socially and economically deprived sections are some of the key justifications that support public investment on higher education. Especially, in the Indian context, public investment is believed as the most dignified way of achieving socio-economic equity in higher education (Chattopadhyay, 2007).

In India, resource allocation to education sector is generally incremental in nature (wherein government expenditure is subject to previous years' allocations/expenditures), not necessarily based on the financial requirement/need or any economic logic. Moreover, Indian higher education system has to compete with other sectors of the economy and also within the sub-sectors of education for public resources. As a result, per student expenditure on higher education shows a decreasing trend in real terms in the recent past. The present policy approach demands a sizable amount of household investment on higher education despite public expenditure remaining as the major source of financing. Thus, both public and household investments on education are highly significant not only because of their magnitudes, but also because of their nature and characteristics. The two are so inter-related and inter-dependent that, absence of either of them, may lead to under allocation/under investment of resources on education (Panchamukhi, 1989).

Since public resource allocation to education is proportionately limited (the share of public expenditure for 2015-16 being 0.6 per cent of GDP and Rs. 68,467 crore), a special emphasis should be given to its efficient use (Aristovnik, 2009). Because, improved efficiency of public expenditure eliminates not only budget constraints, as it allows achieving the same level of output at lower levels of inputs/spending, but also helps in maintaining to fiscal discipline (Mandl, Dierx, & Fabienne, 2008). In addition, The Thirteenth Finance Commission also mandated to consider the need for improving the quality of public expenditure so as to obtain better outputs and outcomes (Lalvani, Hajra, & Pazahayathodi, 2009). Moreover, under the current financial stringency, accountability and cost-efficiency have become a critical topic in higher education during the most recent years (Chakraborty, Biswas, & Lewis, 1999). Therefore, the quality of public higher education expenditure with special reference to expenditure adequacy, effectiveness and efficiency is one of the major issues in the context of higher education.

Apart from the quality of public expenditure, there are strong moral and ethical reasons for supporting equality in educational expenditure in India. In India, equity consideration is probably the most significant justification, as compared to other reasons, for public

intervention in the provision of higher education, given its socio-economic inequities. The issue related to inequity in India mainly has four dimensions i.e., gender disparity, regional inequity, social groups based inequity and inequity based on economic class (Mukharjee A. 2007). Government intervention is assumed to remove the impediments caused by these inequities in respect of access to higher education. On the other hand, Hope & Miller (1988) view that government subsidies to higher education benefit only richer segments of the population due to an overrepresentation of richer students in higher educational institutions (Hope & Miller, 1988). Many studies have also proved the existence of inequity in access to higher education in India based on gender, location, social group and economic class (Mohanty, 2006; Yadav, 2006; Thorat, 2006; & Kingdon; 1997).

The studies also have observed the inability of socially and economically disadvantaged families when it comes to affording higher educational cost from household sources, along with perceived gender differentiation in intra-household allocation of resources to education. These developments clearly indicate the existence of inequities in higher education based on gender, social group and economic class in respect of access to higher education. Given these inequities, one must dwell on distributional effects of public higher education expenditure. Because, providing equal educational opportunities is one of the major justifications for public subsidization of higher education.

The above discussion clearly identifies some of the critical issues related to financing higher education in India both from the supply and demand sides. Public investment through budgetary allocation in terms of its adequacy, efficiency and effectiveness is one of the prominent issues from the supply side. Issues related to household expenditure on higher education essentially throw light on priority and preference accorded by individuals from the demand side. Assessment of distributional effects or distribution of higher educational benefits brings forth both supply and demand side elements and provide valuable information on the inefficiencies and inequities in the allocation of public resources. Therefore, the present study is a focused effort intended to provide certain crucial insights into issues emerging out of the above discussion, using recent data and relevant estimation procedures.

Theoretical Framework

There exist ideological differences in the literature of economics of education with regard to the issue of how education should be financed? How financial burden should be shared between the government and individuals/households? What should be the balance between public and private sources of finance and how to achieve this balance? Financing higher education and other associated issues normally revolve around four fundamental questions. They are (a) is higher education a public, private or even a merit good? (Nature of higher education); (b) what is the economic value of higher education? (c) does the private rate of returns to higher education exceed social rate of returns or vice versa? (Economic value of higher education); and (d) what are the determinants of inequitable access to higher education?

Nature of Higher Education

Before recognizing higher education as a public/private/merit good, one must clearly understand the difference between public, private and merit goods. Public good has two critical properties that essentially differentiate it from the private good i.e., non-rivalry in consumption and non-excludability (Stiglitz, 1999). Non-rivalrous consumption generally does not alter the quantity of consumption of existing consumers if an additional consumer is added. That is to say, the marginal cost of supplying such kind of goods is close to zero.

Principle of non-excludability, on the other hand, indicates the difficulty or even impossibility of excluding any individual from the consumption of goods.

Pure public goods cannot be provided nor can be maintained efficiently by the private sector and other for-profit organizations because of the existence of “free rider” problem. Therefore, governments are mainly responsible for supplying these goods because of two indispensable reasons. First, there is an even demand for these goods by all members of the society and secondly, consumption of public goods is crucial in augmenting social welfare. Under-production and under-consumption of these goods normally diminish social welfare. The best examples of public goods are defense and law and order.

A private good is just opposite to the public good. It is no longer available for another individual once consumed (or at least the consumption of it by one individual diminishes the quantity of good for the other consumer) and it is easy to make people pay for that. Thus, in the case of a private good, both the core elements (of public goods) mentioned above do not exist and the market can make an efficient provision of these goods. Merit good, on the other hand, is defined as a good preferred by the community as a whole and is meant for societal benefit without any reference to the individual choice (Musgrave & Musgrave, 1989). These goods are provided based on the need, not on the capacity and willingness to pay. Provision by the public and private sectors, positive marginal cost, rivalry in consumption, excludability and high opportunity cost are the distinctive features that distinguish merit goods from public goods besides some common features shared by them.

From the above perspectives, higher education cannot be considered as a pure public good because mandatory eligibility requirements for admission, examination, credential certification for the successful candidates, adherence to the norms of institutions and other related processes/formalities in the system of higher education fail to satisfy the principles of non-excludability and non-rivalry in the consumption. At the same time, higher education is not exactly analogous to a private good, which can be purchased and put up for sale in the market through price mechanisms because paying for the good does not entitle students to the degree, it has to be earned by them (Majumdar, 1983). However, by considering the positive externalities of higher education, it can be treated as a “Merit good”. The Indian Ministry of Finance also has classified higher education as Merit II good based on the desirability of subsidization.

Economic returns to Higher education

The idea of economic efficiency in resource allocation is very relevant to dealing with the question of how society’s resources should be shared between education and other forms of investment, or even between different levels of education. The criterion of “Pareto efficiency” or “optimality” suggests that cost-benefit analysis should be used as a guide to resource allocation, in order to know which type of investment is more profitable and offers the highest rate of returns. Accordingly, proponents of cost-benefit analysis have dealt with two types of returns to education. First, “social rates of returns” – measures the benefits that are enjoyed by the society as a whole, as compared to the total resource costs of education. Secondly, “private rates of returns” measure the marginal returns for every addition unit of investment incurred by individuals.

The demarcation of social and private rates of returns to education essentially reflects the degree of public subsidization of education. High rates of social returns to any given good/service support the expansion of public subsidy, while lower social rates of returns call

for contraction of public subsidy. Even though cost-benefit analysis has not succeeded in measuring all the indirect benefits of education, returns to education have been calculated and summarized for many countries by Psacharopoulos in 1981 and 1993. The major findings are (a) returns to primary education are higher as compared to other levels of education; (b) the private rate of returns exceeds the social rate of returns in higher education; and (c) returns to education are higher in the context of developing countries, reflecting a greater scarcity of trained manpower in these countries (Psacharopoulos, 1993).

Inequities in higher education

There is substantial evidence available in the literature regarding educational inequality among different groups across and within countries (sub-national level) over time. Therefore, substantial efforts have also been made to explain why these inequities persist and how they operate? While social and cultural reproduction theories provide a fundamental understanding of educational inequality, scholars have increasingly turned to rational choice theories in recent years. In particular, the theory of Relative Risk Aversion (RRA) has received a considerable attention in the recent literature.

Scholarly works of Bowles (1972), Pierre Bourdieu (1986), and Bowles and Gintis (2002) have dwelled on the role of Economic, Cultural and Social capital in the attainment of education. According to these scholars, societies and social/economic groups within 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 (Bowles, 1972; Bourdieu, 1986; Bowles & Gintis, 2002).

Possession of economic capital, which is immediately and directly convertible to money form, and the possibilities of its being institutionalized in the form of property rights (Bourdieu, 1986) assume 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.

RRA theory makes certain assumptions. They are (a) people's value regarding education does not vary across social classes; (b) average academic ability and economic resources do vary across the social classes; (c) there are also variations in educational aspiration across social classes; (d) desire to avoid downward social class mobility is stronger than that of pursuing upward mobility (Breen, 1999).

The central argument of RRA theory is that educational choices ultimately reflect individuals' 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 maximize the probability of entering into at least the same social class position as that of their parents. According to RRA theory, the reason why inequalities in educational attainment persist is that members of different social classes require different levels of education in order to reach the same social class as that of their parents. When individuals attain a certain threshold level of education which they believe will allow entry into the same social class position as that of their parents, the costs of pursuing further education (in terms of real and opportunity costs, earnings foregone, and the risk of failure to complete) outweigh

the utility of acquiring more education. Since this threshold level differs by social class background, RRA theory predicts that children from working class backgrounds obtain less education than children from higher-class backgrounds (if other things remain unchanged) because they receive no utility from acquiring higher education when it comes to promoting their future social class position. Notwithstanding some irrelevant assumptions, RRA theory provides some useful insights into understanding persisting inequalities in education. In particular, it recognizes the risk involved in investing on human capital from the perspective of social inequality.

The core ideas of these theories can be summarized in the following manner. First, Higher education is neither considered a public good nor a private good. It can be considered a merit good that combines the features of public and private good. Therefore, full subsidization of higher education may not be practicable and affordable. At the same time, excessive privatization and the tendency to view higher education as a pure private individual commodity is not at all acceptable. Second, both society and individuals stand to benefit from higher education, as it yields higher private returns to individuals and positive externalities to the society. Therefore, financial commitments must be shared between individuals and government. In other words, financing of higher education should be an ideal combination of both government subsidy and other non-governmental sources. Finally, variations in resource allocation, academic ability, uncertainty regarding investing on education and educational aspiration of different social classes are also important, along with monetary returns, when it comes to educational choices. Moreover, these social and economic variations tend to increase the educational inequalities across different socio-economic groups in the absence of government intervention, even the expansion of higher education through privatization. On the other hand, increased spending may not necessarily improve educational outcomes, unless there is an improvement in the efficiency of government spending. In the same way, increased resource allocation may not ensure equity in higher education unless there is an appropriate mechanism (delivery system) for targeted public expenditure. Thus, the role of government intervention, quality of public expenditure and well-targeted public expenditure are pivotal to achieving an optimal investment on higher education.

Literature Review

Financing of higher education has received much of attention from both economists and educationists. There has been an enormous research done in India related to trends in and patterns of public expenditure on higher education. Tilak (1993) as a prominent supporter of public intervention in higher education, has critically reviewed the proposal of privatizing higher education against the backdrop of economic reform policies. Tilak (1992, 1999b) has also expressed his reservations for considering educational loans as one of the alternative sources of financing higher education in India. Tialk & Rani (2000) examined the finances of select universities for the post reform period in India. Majumdar (2005) projected the resource requirement of education sector for the period 2005-06 to 2014-15. A Study related to the determinants of public expenditure on education was undertaken for 15 major states of India, by Chakraborty & Joglekar (2006).

The empirical literatures related to household expenditure on education can be classified into two major groups. The first set of studies analyses the relationship between household educational expenditure and certain macro economic variables. For example, studies undertaken by Panchamukhi (1965); Tialk (1988), estimated the

total cost of education in relation to Gross Domestic Product in India. The estimated total cost includes public expenditure, expenditure on education from household sources and opportunity cost of education. Further, Tilak (1991) and Prakash&Chowdhury (1994) analyzed the relationship between public and household expenditure on education. For this purpose, the authors estimated the extent of elasticity of household educational expenditure to changes in the public expenditure in India.

The second set of studies related to household educational expenditure deals with the empirical works that measure the impact of household characteristics on household educational spending. Majority of these studies focused on understanding the impact of household income and gender on household educational spending, using household and individual level data (Tilak, (2002); Choudhury, (2009)). The former study focused on examining elementary education in respect of rural India, whereas, the latter dealt with engineering education in India.

There exists a fair body of empirical work undertaken aimed at discovering gender bias in intra-household resource allocation in the context of Indian subcontinent. However, these studies have thrown up mixed results. For example, Subramaiam and Deaton (1991) found no trace of gender discrimination with respect to household educational expenditure in the Indian state of Maharashtra, while as Kingdon (2005) argues, gender bias in the allocation of household resources to education can occur in two ways: (i) gender bias via zero spending on girls and positive spending on boys; and (ii) gender bias through a lower educational expenditure for girls than boys, conditional on positive educational expenditure. Averaging across these two mechanisms of gender bias may lead to the conclusion of unbiased intra-household allocation, if gender bias operates through any one of the above mentioned channels (Kingdon, 2005).

There are also a few studies that have tried to link the public educational expenditure to its performance. A study conducted by Kaur and Misra in 2003 covered a sample of 15 non-special category states as part of examining the level and effectiveness of social sector expenditure in the fields of education and health over the period 1985-86 to 2000-01.

Lalvani et al, in 2009, made an attempt to assess the expenditure quality of social sectors pending (spending on public and merit goods) by the government in order to suggest a criterion for inter governmental transfer scheme into the existing design of Finance commission transfers. Sunitha and Duraisamy (2009) conducted a study on the efficiency of engineering and polytechnic institutions in Kerala, a southern state of India.

Analyzing the distributional impact of higher educational spending is not very new to the researchers. Although the empirical evidence on the distributional effect of higher education subsidies is quite ambiguous, many economists assume a regressive distributional impact of these subsidies, given a higher enrolment of children from wealthier families in higher education (Barbaro, 2003). The early studies related to this issue, have used "Net transfer calculation of subsidies" method for the above purpose. Empirical research on the distributional effect was carried out for the first time by Hansen and Weisbrod in 1969 with respect to public funding of Californian higher education.

Studies conducted by Mahal (2005), Asgar & Zahar (2012) and Mitra (2015) are some of the major studies that have analysed the distribution of educational expenditure in respect of Asia. Both Mahal (2005) and Mitra (2015) have used National Sample Survey Organization

(NSSO) data. Both Mitra and Asgar&Zahar have explained the benefit incidence, using concentration curve and index.

There is an enormous research done on public educational expenditure. Yet, most of the studies have concentrated on trends, relative priorities, revenue and capital expenditure and other related issues. There are also a few studies available on household expenditure on education. Most of the studies related to this area, have dealt with gender discrimination in the intra-household allocation of resources to education and there is a dearth of research on the determinants of household expenditure with special reference to higher education. Very little is known about efficiency and benefit incidence of public expenditure on higher education in India.

Research Gaps

Access to public higher education is dependent on service provision from the supply side and household preference and investment from the demand side. Household investment on higher education plays an important role even though higher education is fully subsidized, as the cost of education includes not only visible costs, but also opportunity cost. Access to higher education is also determined by the socio-cultural and economic conditions of individuals/groups and educational inequality across various groups is not a random phenomenon; rather it is systemic and systematic in nature. The welfare economists and specialists in public finance on the one hand, and the neo-liberal economists, who have a firm faith in market philosophy, on the other hand constitute two distinct schools of thought on the issue of financing higher education.

There is also an evidence of regressive distribution (transfer of resources from the poor to the rich) of resources spent on education in India (Rao & Mundle, 1992; Mahal, 2005; Mitra, 2015) and elimination of such regressive subsidies requires a massive expansion and effective targeting of educational facilities. As per the hypothesis of Maximally Maintained Inequality (MMI), coined by Raftery and Hount (1993), class-based inequalities in educational attainment persist until all the members of high-status groups attain a threshold level of educational attainment (Alon, 2009). Both the Maximally Maintained Inequality (MMI) and political economy model of Lanjouw and Ravallion (1999) indicate that expansion of educational facilities is the key to assuring an equitable access to higher education for economically disadvantaged groups.

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. Although many studies have been undertaken, most of them appear monotonous in terms considering similar issues with regard to financing of higher education over the years. The following research gaps have been identified as an outcome of a review of theoretical and empirical literature.

State governments are more account able when it comes to provision of education. There exist huge variations across states with respect to educational expenditure. Moreover, governments have shown a tendency towards cutting down on social sector expenditure during economic slowdowns in India, both at the national and sub-national levels. Despite its significance, there is hardly any study that has attempted to understand the impact of output fluctuations on the allocation of public resources to higher education at the sub-national levels in India.

Studies related to household expenditure remain heavily concentrated on gender

discrimination in the intra-household allocation of resources to education. Moreover, most of these studies have focused on elementary and secondary education and also these studies confine themselves mostly to analysing the household expenditure only for one point of time. Household expenditure assumes a greater relevance in the context of higher education, as compared to elementary levels of education due its association with higher opportunity cost, given the labor market outcomes. There is a dearth of research on the determinants of household expenditure with a specific reference to higher education. In addition, no study (to the best of our understanding) has attempted to understand the determining factors of household higher educational expenditure for different time points in the Indian context.

Quality of public expenditure on higher education across different states in India with a special reference to resource adequacy, efficiency and effectiveness remains mostly unexplored in the Indian context.

There are a few studies that have analyzed the incidence of public education benefits. The empirical research based results suggest mostly a regressive and ill-targeted health and education expenditure that literally transfers resources from the poor to the rich, though designed to fetch a high proportion of benefit to the poor (implicit assumption). Research studies suggest that rich people may garner the benefits of public spending in the early stages of implementation (early capture) due to the cost involved in participating in a higher level educational program. These costs could be in explicit forms like fees, payments, and other compulsory expenditure or in a hidden form such as opportunity cost with respect to students' time (Lonjouw & Ravallion, 1999).

A subsequent expansion of the program (higher educational facilities) reduces the marginal cost of higher education, enabling the poor to avail of the benefit in the later stages of program implementation (*Ibid*). An analysis of benefit incidence of higher educational expenditure for two or more points of time allows for a verification of the above theoretical premises. Thus, a comparative analysis of the benefit incidence of public higher educational expenditure based on different household surveys is also one of the important identified research gaps.

Researchable Issues

The present study is a genuine effort at bridging the research gaps emerged from the literature review. The following are the researchable issues, given the data, time, resources, constraints.

Trends, patterns and determinants of financing higher education in India.

Quality of public expenditure on higher education

Benefit incidence analysis of Public higher educational expenditure

Objectives

To analyze the trends and patterns of Public expenditure on higher education in India

To understand the factors that determine household expenditure on higher education

To assess the quality of public expenditure in terms of resource adequacy and efficiency

To examine the benefit incidence of public expenditure on higher education

Analytical Framework

The analytical framework to accomplish the above mentioned objectives is presented in figure 1.2. The first objective contains two components. In the first component, a brief analysis of trends in the public expenditure on higher education (at all India level) is carried out along with a policy discourse. An analysis with regard to cyclical behaviour of

educational expenditure at the state level in India constitutes the core of second component of the first objective. Similar to the first objective, the second objective also contains two major components. The first component aims at understanding the patterns and salient features of household higher educational expenditure in India. The second component tries to determine the factors that impact household educational expenditure, using unit level records of nationally represented survey. The third objective tries to understand the relationship between higher educational expenditure and select educational output/outcome indicators at the sub-national level in India. For this purpose, the study has adopted a “Triple E Framework”. The last objective deals with the incidence of public higher education expenditure in India. The incidence of public higher educational expenditure across various income groups has been measured using standard and marginal benefit incidence analysis.

Key Concepts

The present study has made use of several key concepts related to financing of higher education in India. This section provides a brief description of select concepts used in the study.

Expenditure Cyclicity: The cyclical behaviour of an expenditure policy refers to the way government expenditure policy responds to changes in the Gross Domestic Product (GDP). An expenditure policy is said to be “pro-cyclical”, if it is expansionary in economic booms or good times and contractionary during economic recessions or bad times. Opposite is the case of “counter-cyclical” fiscal policy (Mukharjee, 2014). A pro-cyclical fiscal policy implies an increase in both revenue and expenditure of the government at a faster rate than the GDP during good times and a decrease at a faster rate in bad times. A counter-cyclical fiscal policy indicates an inverse relationship between government’s revenue and expenditure and GDP. On the other hand, a fiscal policy is called “acyclical” if it illustrates no association with output fluctuations (good or bad times) (Abbott & Jones, 2013).

Public Expenditure Quality: Expenditure quality at the macro level involves many issues like implementation of Fiscal Responsibility and Management Act, expenditure restructuring, performance and outcome based budgeting, etc (Lalvani, Hajra, & Pazahayathodi, 2009). However, the present study considers the microdesign for improving the quality of public spending. To measure the quality of public spending the study has adopted, “Triple E Framework” advocated by Lalvani et al (2009). Expenditure Adequacy, Effectiveness and Efficiency of Expenditure are the basic constituents of this framework.

Expenditure Adequacy: Provision of an adequate expenditure is an essential pre-condition for improvement in expenditure quality, as it is a pre-requisite for improving outputs and outcomes. Ideally, a reference has to be made to the needs and cost disabilities of the states while judging the adequacy of expenditure. However, given the complexities involved in the computation and data constraints, this study has not attempted to assess the needs and the spending disability of states. Instead, it has made an attempt to estimate the Expenditure Adequacy Index of Indian states based on per capita expenditure incurred on higher education.

Effectiveness: Effectiveness relates inputs and outputs to the final objectives to be achieved i.e. outcomes. The outcome is often linked to welfare or growth objectives and, therefore, may be influenced by multiple factors, including outputs and exogenous factors (Mandl, Dierx, & Fabienne, 2008). Therefore, there is a need for a shift in the focus from outcomes to outputs with respect to measuring effectiveness of the public spending. Outcome indicators

may not be useful when it comes to prove the expenditure performance, as they are considered slow moving indicators (Mala Lalvani, 2009). Thus, the present study has attempted to develop an Effectiveness Index of public expenditure on higher education using certain output indicators (higher education) related to states.

Efficiency: Efficiency refers to organizing of available resources in such a way that a maximum feasible output is produced. That is no alternative combination would yield a larger output. In other words, the ratio of production factors should be optimal so that a maximum output is achieved with given inputs. With the help of efficiency, the pure relationship between inputs and outputs can be measured taking production possibility frontier into account. This measure assesses how far states are efficient in producing a desired level of output, given the level of inputs. The efficiency measure is a normative measure.

Benefit Incidence Analysis (BIA): BIA is widely used to measure the distribution of public services or publically provided private service across various groups in the society. BIA brings both the supply and demand elements together for public services and can provide valuable information on the inefficiencies and inequities inherent in the government allocation of resources to social services and 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.

Conclusion

Both descriptive and inferential statistical and econometric tools have been used in the present study. Trends and patterns of public higher educational expenditure and household higher educational expenditure are explained with the help of simple descriptive statistics such as average, ratio, percentage, growth rate, etc. A dynamic regression model (System-GMM) with various specifications has been adopted for analyzing the cyclicity of educational expenditure at the sub-national level. Determinants of household higher educational expenditure have been identified using liner regression estimation with double log specification and Working-Leser specification. A Triple E Framework, essential for measuring adequacy, effectiveness and efficiency of public higher education expenditure, has been adopted to define the quality of public higher educational expenditure, in India. We have defined the degree of higher educational expenditure quality with the help of a composite index. This composite index has been derived from the component indices of expenditure adequacy, expenditure effectiveness and expenditure efficiency. Indices related to expenditure adequacy and expenditure efficiency have been calculated by adopting Human Development Index (HDI) methodology, whereas non-parametric Malmquist Data Envelopment Analysis (MDEA) has been used for deriving expenditure efficiency index. Standard Benefit Incidence Analysis (BIA) and marginal benefit analysis have been employed for analyzing the distribution of public higher educational benefits across different income classes in India.

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