

How Much These Degrees Really Cost? A Case Study

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Abstract

Education has been considered a human right and a public good in global public policy at least since 1945. This conceptualization has been produced and advanced by international organizations ever since. A lot of research has been done and many justify public subsidization of education on the grounds that education is a public good and social benefits of having a large higher educated population go beyond the increase in GNP.

The paper aims to study the cost of producing a degree at college level. Taking Johnson (2009), the research applies 'credit hour of instruction' model to measure the output. The study is mainly secondary in nature and the data has been collected from the accounts department of a college.

Key Words

Cost of Higher Education, Education Costing Model, Public Subsidies.

INTRODUCTION

Education has been considered a human right and a public good in global public policy at least since 1945. This conceptualization has been produced and advanced by international organizations ever since, particularly by UN agencies (UNESCO, 2016). Education, including higher education, is heavily subsidized by the state in almost all the countries of the world – not only in developing countries, but also in developed countries (Blaug and Woodhall 1979; OECD 1990).

A lot of research has been done and many justify public subsidization of

education on the following grounds. Firstly, education is a public good and social benefits of having a large higher educated population go beyond the increase in GNP. (Tilak, 2004). Secondly, attainment of education leads to equality of opportunity (Blaug and Woodhall 1979). In another study, Arrow (1994) observes that imperfections in capital markets and asymmetric information are possible justifications for the public subsidization of higher education. Further, in education average costs decline as enrolments increase and higher levels of education can be particularly subject to this phenomenon. University systems, scientific equipments, libraries, etc., cannot be used on a small scale and hence, it may be more efficient for government to produce it and provide at a price equal to the marginal cost (Coleclough 1996). There are several other arguments : public subsidies are necessary to protect democratic rights; to promote cooperation instead of competition; to promote national values, and so on (Tilak, 2004).

It is a fact that public universities in our country are providing their services for less than it costs to produce and cover the difference with subsidies from the Government. Given the economic profile of the nation and its people, it may not be desirable to ask the parents of young students, to pay the full cost of education. But then, it has to be paid and someone (taxpayer) is paying. The students must know how much has been spent on them by the system during their studentship in an institution and how much of subsidy they enjoy.

More broadly, the structure of costs in higher education institutions is of key policy relevance in a number of respects. Government must know the actual cost within the sector before providing subsidy or making contributions. Government is continually under pressure to ensure that public services are delivered efficiently. Analysis of costs provides a great deal of information about the cost-efficiency of institutions and about how this might be improved (Jhones *et al.*, 2005). "What gets measured gets managed", is an often-quoted phrase in management literature. Any discussion about managing the 'cost of a degree' must start with a more fundamental question: What does a degree cost to produce now? The present paper attempts to unveil the cost quagmire of producing a degree in a higher education institution.

DEVELOPING EDUCATIONAL COSTING MODEL

In the recent past, quite a progress has been made by few universities in USA and UK giving a suitable taxonomy and methodology needed for calculating cost of a degree. One notable document in this context is the Delta Cost White Paper, USA. Using state level data from Florida, costs for various programmes at eleven colleges and universities have been measured. Five different approaches for cost calculation have been outlined including one from the perspective of students.

(Johnson, 2009). In another study, Horn (2015) attempted to analyze the institution-level panel data to predict educational expenditures using the regression models to generate adjusted efficiency scores that reflect the extent to which educational expenditures deviate from an expected level. Li (2013) made an attempt through supply and demand framework to analyze various forces that may be driving the price of higher education to rise above the Consumer Price Index over time. A study by Jhones, Thanassoulis and Lenton (2005) evaluated different costing models and applied state-of-the-art techniques to analysis the cost structures in English higher education institutions using panel data from 2000-01 through 2002-03. Romano *et al.* (2010) in their study used different measures of calculating the cost of a college degree at an up-state community college in New York. Departmental cost per credit hour, direct instructional costs, and full costs are calculated and compared. A transcript analysis of the 2008-09 graduates highlights excess credit hours taken and cross-subsidies necessary within degree programs to produce these graduates has been calculated.

The foremost issue, before cost ascertainment, is to decide about the 'measure of output' in these institutions. Most popular measure is to consider "credit hour of instruction" as an output. Credit hour is the basic unit of measurement that contributes towards award of degree. Every degree would have its own set of requirements for credit hours. Till the time all higher education institutions in our country follow 'Credit system', cost calculations can be made simpler by replacing 'credit hour of instruction' by 'hour of instruction' given by a teacher.

Thus, the costs of the output in a university or college would be determined by loading systematically and rationally some of the institutional expenditures onto the teaching departments so as to find 'total expenditure by academic department' producing the output. Capital cost may be ignored. Expenditures, not directly involved in generating course instruction hour, are counted as indirect cost.

Substantial chunk of the annual expenditure in our universities/colleges is spent on salaries of teachers. One very simplified approach to calculate and compare cost will be to focus only on costs incurred on teachers associated with a particular degree course. This will be the most easily traceable element of cost. For example, once a representative yearly figure implying 'how much a teacher cost' to the institution is found out, assumption about the distribution of faculty time for teaching, research and services has to be made.

Dividing this yearly expenditure by the number of instruction hours given by all teachers will be an average cost per instruction hour. This cost per hour, now, will be shared by number of students in a class. What number of students? Number 'permitted' to be enrolled or 'actually' enrolled? Inter or intra-university/college cost

comparisons will be valid only if 'permitted' numbers are considered, otherwise capacity cost distortions will emerge. Cost of degree per student will be the number of hours of instruction student has taken during the duration of degree course multiplied by cost per student hour of instruction. To get the full (total) degree cost, indirect costs such as student support, administration etc. is to be added until all operating costs are accounted for. In addition to the direct costs of instruction, which are primarily personnel-related, the expenditure analysis allocates indirect costs — such as student support, academic administration, advising, university support, library services, financial aid, and plant operations — to each category of student credit hours (Johnson, 2009).

OBJECTIVES AND METHODOLOGY

The paper aims to study the cost of producing a degree at a specific college level. The college is in existence for the last five years and offering four undergraduate degree level courses with the help of 18 teachers. Authorities of the college requested anonymity. As mentioned above, a very simplified approach focusing on costs incurred on teachers associated with degree courses has been followed. Following the methodology given by Johnson (2009), the study applies

Table 1
Cost Ascertainment (2015-2016)

1.	Annual Faculty Salary Bill (Rs.)	10625000
2.	No. of Students Enrolled in all the Three Years of Various Courses*	735
3.	No. of Papers Offered During One Year (Two Semesters) in a Degree Course	12
4.	No. of Papers Offered During Three Year Duration	36
5.	No. of Instructional hours per paper per semester	75
6.	No. of 'Three Year Duration' Undergraduate Degree Courses Offered in the College	4
7.	Total No. of Instructional Hours Generated During One Year to Sustain 4 Courses. For Each Course Classes are held Concurrently for First to Third Year Students (Sr.Nos. 4*5*6)	10800
8.	Average Cost Per Instructional Hour (Sr.Nos.1/7) (Rs.)	983.80
9.	Average Cost Per Student Per Year (Sr.Nos 1/2) (Rs.)	14455.78
10.	Average Cost Per Student for a Three Year Degree Course (Sr No. 9*3) (Rs.)	43367.35

*All seats in All Courses Filled

'hour of instruction' model to measure the output. The study is mainly secondary in nature and the data has been collected from the accounts department of the college.

Cost data reveals that 'cost of teachers' represents exactly 60% of the annual recurring expenses in this college. Details about cost ascertainment have been provided in the Table 1.

It must be remembered that above costs have included only the faculty salary component. This component, as stated earlier, represent only 60% of the annual recurring cost. Further, all capital expenditure components have been excluded. Full cost of degree per student will be quite higher than the ascertained figures shown in above analysis.

The analysis, presented above, is highly aggregative in nature. However, the same can be fine tuned so as to ascertain the cost of courses representing different disciplines. Further, valid assumption can also be made about the allocation of teacher's time for teaching, research and other activities. Similarly, costs other than faculty can also be suitably allocated to different courses and ultimately included in calculating full cost of a degree.

SUGGESTION AND CONCLUSION

The paper tries to diagnose the cost-behavior of producing a degree in different educational institutions of three universities of northern India. Following outcomes need pondering over this sensitive issue :

1. We need to acknowledge the fact that different degrees do not cost the same and tuition fee in most of the courses in these institutions is not covering full cost of these degrees. Cross-subsidization is happening in more than one way. First, production of different course degrees within a college are cross-subsidizing each other, keeping in view different tuition fee structure, of various courses. Second, higher fee structure applicable to courses offered under 'self-financed scheme', subsidizes other courses. Third, self-sufficient colleges generating surplus subsidize other colleges promoted by the same Educational Society.
2. Any organization where most of the costs are committed or time-related, the best way to reduce the incidence of total cost per unit of output is to increase the utilization rate of facilities and faculty resource. Like any other service sector, education also presents a situation where economy of scale is a very relevant issue. A moderate multi-disciplinary non-aided college must enroll more than 600 to 650

students to become self-sufficient. As mentioned earlier, fixed number of students are allowed to be enrolled in a class of a given degree course. Unfilled seats in a class implies total cost burden falling on lesser number of students. This cost-behavior is typical of service industry. Unlike product industry, unsold service cannot be stored for future. Thus, an unoccupied seat in an air flight, unoccupied room in hotel and unfilled seat in an academic course is not a good economics for the providers of these services. It hits them hard and that explains high aggression in marketing of their services.

3. Concentrating on core and out-sourcing non-core results into more rational allocation of resources. Core activities of a university/college — teaching, research, consultancy service and outreach — are supported by non-core activities such as, administration, security, printing, facilities management, food services, athletic facilities, healthcare etc. Proper costing framework will also help in developing an appreciation for outsourcing of non-core services to specialized agencies. What is non-core for one organization may be core for another. Problems associated with non-core activities, to the extent possible, should not be allowed to consume time of the faculty member. We need to remember that a teacher is the kingpin and single most costly resource in these institutions.
4. In recent times, few ministries of Govt. of India, e.g. Agriculture, Petroleum & Natural Gas and Railways have attempted to ascertain the cost of their products/services specifically for subsidy calculations. Such quantifications and communications have helped Govt. to give options to certain sections of society to voluntarily give up subsidy. It can and should happen in education sector also. Students from well-to-do families may like to voluntarily give up the subsidies and contribute to the endowments meant for helping poor and deserving students

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