FINANCIAL NETWORK ANALYSIS WITH REGARDS TO UNIVERSITY LIBRARY PERIODICAL BUDGET ALLOCATIONS

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Introduction

From the early days libraries are recognised as part and parcel of the education system. It has been pointed out that the true phenomenon of 20th century higher education has been the development of university libraries. In India the establishment of UBC in 1956 is an important landmark in the growth and development of university libraries.

University libraries occupy primary place because it serves all the functions of a university - teaching and research, the creation of new knowledge and transmission to posterity of the learning and culture of present and the past. One of the national policies on Library and Information Science was to take up steps for mobilizing and upgrading the existing library and information systems and services and initiating new programmes relevant to our national needs, taking advantage of the latest advances in information technology. But to fulfil this policy objective, there is need to provide adequate financial support for the university libraries. It requires a financial network analysis to identify the causes for allocative constraints.

Periodicals

It is a well established fact that among the primary source of documents, periodicals occupy the first and foremost place. It contains the most recent findings of research. The periodicals and journals have become the most convenient channels of information dissemination on current events. Since the main function of the university libraries is study and research, a good periodical collection helps to invent new theories, suggest alternatives and to bring overall development of a nation.

Objective of the Study

The issue here is that inspite of several benefits derived out of a good

periodical collection, libraries all over the world are unable to maintain a proper periodical collection due to decreasing acquisition power. The universities are facing ever increasing prices of periodicals, diminishing budgets, and decreasing purchasing power of one's own currency. The problem of increasing prices of periodicals continues to plague the university libraries. They are unable to subscribe to sufficient number of periodicals to support academic and research programmes. A developing country like India is further suffering with high rates of inflation, devaluation (and uncertainty) of rupee, and increasing postal charges etc. due to the following external and internal problems, the purchasing power of rupee as well as the acquisition power of periodicals in the libraries is decreasing.

Some of the EXTERNAL factors are : (i) information explosion, (ii) increasing cost of reading materials, (iii) geographical location (iv) publishers policies, and (v) technological development. As an example the price of Journal of Operations Research increased from $ 15 in 1987 to $ 100 in 1988. Similarly, Current Science's has increased from $ 30 in 1983 to $ 122 in 1984 etc. The INTERNAL problems are : (i) dependence on foreign publications, (ii) domestic inflation, (iii) foreign exchange fluctuations, (iv) government policies, (v) establishment of new organizations and disciplines, (vi) increasing user population and (vii) research in micro and inter-disciplinary areas. It is thus obvious that these internal and external factors contributed to the decreasing power of acquisition of periodical literature.

The purpose of this paper is to examine the impact of these factors and provide a methodology to rationally allocate the library budgets so that high academic and research standards set by the universities will not be effected. A study examined the trends in periodical prices, impact on mainly, inflation, foreign exchange etc. This study is restricted to the University of Hyderabad Library system only, even though this can be equally valid to any other university libraries. In the networkof budget allocations, it is important to identify the cause and affect of various responsible factors. This study identifies the factors that are exogenous to the system and evaluates their impact on the budget allocations.

Network Model

While estimating the trends in the prices of periodicals one has to evaluate the associated budget constraints. Apart from the escalating price of periodicals there are other inputs contributing to the university budgeted

allocations. For example, an increase in the teaching staff, or research grants and projects, student enrollment, expansion of new disciplines do contribute to higher periodical collection costs. In this study an attempt has been made to establish the relationship between increasing student enrolment and faculty strength, price escalation of periodicals and the expenditure of the total university, university library, and the periodicals.

The regression analysis technique in which the functional form (in a linear form), will explain not only the strength of the relationship by sign and size but also the importance of the relevant explanatory variable. A functional relationship has been established between the expenditure as dependent variable and student enrollment and faculty strength as well as index of periodical prices as independent variables. The dependent variables are Total university expenditure (UNIB), Library budget (LIBB), and Periodical budget (PERRB). By applying the ordinary Least Squares method of estimation covering the sample period 1981 to 1991, the following equations were estimated. The computed statistical values are reported in the parenthesis.

1. University Budget

$$UNIB = -44629800 + 19638.34 \; UNIEE* + 432699.5 \; INDEX*$$
$$(-5.7924) \quad (2.15550) \qquad\qquad (3.2537)$$
$$R\_Z = 0.9861, \qquad DW = 2.457, \qquad SEC = 2867875.8$$

This estimated equation indicates that the student enrollment and faculty (UNIEE) periodical prices (INDEX) are significantly influencing the variations in the university budget (UNIB). As expected, an increase in the student enrollment and faculty strength and increase of periodical prices, will significantly rise the university budget. In a statistical sense the co-efficient of these variables are significant. Nearly 98.61 % of the variation has been explained by this estimated equation. Thus it can be considered as a good fit equation.

2. Library Budget

$$LIBB = -685327.0 + 4515.557 \; UNIEE$$
$$(-1.3493) \quad (12.1696)$$
$$R^{-Z} = 0.9425, \qquad DW = 2.7667, \qquad SEC = 581206.17$$

This estimated equation indicates that the student enrollment and faculty strength (UNIEE) has a significant positive impact on the library budget (LIBB). Any increase in the student enrollment is expected to increase the library budget substantially. Based on the statistical indicators

the co-efficient of the enrollment variable is significant. Overall 94.25% variation of the library budget can be explained by the enrollment variable. Thus also it can be considered as a good fit equation.

3. Periodical Budget

$$perb = -2862251.1 + 2684.278 \; UNIEE*$$
$$(0.66) \qquad (8.45)$$
$$R^{-Z} = 0.8756, \qquad DW = 2.3757, \qquad SEC = 496656.1$$

The estimated equation for the periodical budget (PERB) indicates that the student enrollment and faculty strength is a significant factor. Any increase in the student enrollment and faculty strength will significantly increase the periodical budget. The fitted equation indicates that nearly 87.56 ^ of the variations in the periodical budget can be explained by this equation.

All the above estimated equations indicate that the allocations must consider the price escalations of periodicals as well as the student and the faculty strength. This hypothesis is further supported when some of these equations were estimated according to the subject.

Conclusions

The estimated equations of regression analysis for University budget, Library budget, Periodical budget and for Individual subjects are statistically significant.

The estimated equation proved that any increase in student and faculty strength and also periodical prices should necessiate an increase in the budget allocation.

Reference

1. Reddy, Nagi Y., 1993. Escalating Periodical Prices and its Impact on University Library Subscriptions : An Economic Analysis. Ph. D. Thesis, Andhra University, Waltair, India.