

# The Analysis to Identify the Cost of Operations and the Per Capita Expenses of Students in Higher Education Institutions of Iran (A Zahedan Payam Nour University Case Study)

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**ABSTRACT:** Awareness of the cost of higher education institutions, in the exercise of effective control of system operation Performance evaluation of new targets is the higher education system. This study presents a model to measure and calculate the cost of the activities, actions and services for education and research was done. The structure Organizational tasks, recognition activities, cost evaluation, treatment and classification of the types of costs Payam Nour University, Zahedan three-year period 1389 to 1391 were studied. The results showed that the cost model to measure cost per student per course section sum Feedcosts, training, research and cultural services is welfare. Training cost inflation factor of 11 Percentage of research cost 1% and 5% student welfare and 7% cultural services.

**Keywords:** higher education, activities, assessment model, cost, Payam Nour University Zahedan.

## INTRODUCTION

Nowadays the role and importance of universities and higher education institutions in expanding the frontiers of knowledge and training specialist human resources to promote sustainable development in different countries of the world is evident to everyone and this important issue will be realized through the development of a management system in universities and institutions of higher education by conducting knowledge-based management based on timely and reliable information on the processes and organizational functions. One of the necessary information is indeed the management's awareness of the cost of services, activities and products such that these data not only provide the basis for the resource allocation but also provide a measure of the performance of management and organization.

Therefore this study sought to: provide an appropriate costing model for the educational activities based on the environment conditions by examining existing models of costing and probability estimation and their application in estimating the cost of training activities in the University Of Payam Nour (PNU).

### **Research objectives:**

1. Developing consciousness about the selection and application of costing concepts and models of education;
2. Identifying criteria for costing activities in case study;
3. Calculating the principles of cost, per capita expenditures and the cost of each activity;
4. Accordingly, in short, identifying suitable educational costing model and forming the students' per capita cost function are the focus point of the objectives and expectations of the present study.

### **Research questions**

1. What are the cost factors in the sample?
2. What are the cost centers in the sample?
3. What is the cost behavior in the sample?
4. With respect to the objectives, functions and organizational structure of the PNU which costing model is appropriate?

5. How is the students' per capita cost function and the constituent elements of the cost of the educational services and activities?

### **Literature**

The literature of costing in the universities and Higher Education Institutions implicate a specific methodology which is now being used in an extensively or partially based on the principles for costing the Higher Education Institutions which is called the Activity Based Costing (ABC). A study titled "the establishment of effective and efficient management in public institutions" was conducted for the state education in which the New Jersey public schools were analyzed. This study addresses the management accounting view points using the ABC to identify variables that effect the realization of optimal organizational performance (Naranjo and Hartman, 2009). A study was conducted in order to analyze the establishment of costing system based on the activities of informatics section of the Charge Bax software enterprise. The ABC system is suggested as the alternative to traditional costing system (Neuman, 2004 ). The study of the application activity-based costing in the Medical University of Turkey divided the activities into three parts of business, production and services. This study general information about ABC presents advantages and disadvantages of the traditional and activity-based costing in hospitals ( Drazig Lutisky, 2012 ). Another study titled "designing management model" identifies the opportunities and constraints of the universities in the European Union. This study is a full costing method in European universities to identify opportunities and constraints using activity-based costing ( ABC ).

The literature on Calculation of costs of students includes various studies.

Researchers have calculated the per capita budgets allocated to the students using the criterion student factors through proration (Vahidi, 1985 Alaei and Fazeli, 1993) have almost used the same model but based on real value of cost performance (Qotbi, 1997).

There is another study in order to design the framework of activity-based costing model in the universities and of higher education institutions. The results show that the activity based costing is capable of separating the unit cost of some products or services in a multi product organization (which is closely related with the conditions of the universities) and specify the cost used by the various costs of an organization.

In this research titled "using the activity based cost systems in functional budgeting in public companies" has mentioned the barriers and challenges of the operating stages of the activity based costing system in public companies and finally has stated the role of accounting the cost of functional budgeting in the public companies (Hashemi and Pouramin zade, 2010).

### **Definition of concepts**

The cost includes the monetary value of the economic resources consumed to achieve a certain goal with a specific advantage in the past or planned to be consumed in future.

- 1) The cost of product or service, including: the process of collecting, sorting and allocating the cost of direct materials, direct labor, and overhead costs to provided products or services.
- 2) The importance of costing in the development process

In the effort to find the components of the new world universities to achieve knowledge-based sustainable development, the education quality is one of the main issues about which there is an agreement. The effectiveness of the system of higher education can have a decisive role to enhance the quality of the products provided by the universities. The effort of the experts and policy makers of higher education to operate the law orders to achieve efficiency and effectiveness depends on the formulation of the model to analyze the universities' cost.

## **MATERIALS AND METHODS**

This research is a case study survey conducted on Zahedan PNU during 2010-2012. In order to conduct this research the accounting documents of Zahedan PNU, legal books, the budget functions and property books during 2010-2012 were assessed.

The costing process includes the following components and logical relations:

1. The spent resources, namely, manpower, materials and consumer goods and other costs
2. The resource costs including the personnel, consumer goods and services and overhead services.
3. Activities: Identifying the tasks that can make a final output
4. The cost sources including the grouping of the costs into several groups
5. The cost incentives is any factor that changes the overall level of spending
6. The centers of cost determined by the structure and determining the organizational tasks
7. Centers of activity are the link between the costs and cost objectives

8. Cost object: anything the measurement of which to be considered separately, and any object the cost of which can be traced and has a key role in the strategic management of the organization can be deemed as the cost object.

**Identification of the measure function includes 13 steps**

**Step One:** Identifying the cost and activity centers

In this level the tasks or processes that create the output are identified, the activities can be classified into several groups

**Step Two:** Identifying the activities and semi-activities in cost centers

It is the first step in understanding the organizational structure of university activities.

The third step is to measure the volume of each of the activities in the activity center

The activity centers link the costs and cost objectives therefore it is necessary to identify all activities. Each activity has multiple activities, so the analyzed activity centers are separated based on intensity, frequency and priorities.

The fourth step is to identify the costs in each category and activity centers

**Allocation process:**

1. The costs that are directly related to a specific activity can be directly allocated to the activity;
2. Obtaining the related personnel costs and allocating them in terms of intensity;
3. Allocation of other expenses on the basis of appropriate incentives.

**Step Five:** Extracting the costs information per fiscal year

Costs information is recognized based on payrolls and other expenses.

**Step Six:** Classification of costs based on the object

The cost information is classified into four groups of using goods and services, personnel costs, depreciation and repairs.

It is better to classify based on the behavior and the costs are classified into three categories: fixed, variable and semi-variable.

**Step Eight:** sharing the cost of each activity centers on the activities carrying cost

Using the organizational chart and job descriptions the main branches of the PNU and the minor activities are specified in the province and the city of Zahedan.

**Step Nine:** classifying activities

Identifying the main activities related to the costs related to the cost objects: this work is to describe the tasks or processes that a delegate or final output creates. After this stage, the activities are classified into main categories.

**Step Ten:** Extracting and identifying the cost of each activity

**Step eleven:** Student and faculty population are identified according to the school and discipline each year

Calculating the per capita and the total cost

After the allocation of costs to activity centers and identifying the student population, the cost per student is calculated.

**Step twelve:** Calculating the per capita cost in the undergraduate state in any major

**Step Thirteenth:** Calculating the total cost or per capita total cost in any major

Per capita measurement model or the cost of each major

The results of the studies show that the main activities can be divided into four main groups of education, research, cultural and recreational services and the cost model or the per capita cost is based on the following equation:

$$f(x) = a_{x1} + b_{x2} + c_{x3} + d_{x4}$$

Where:

a: Educational cost factor

b: Research cost factor

c: Cultural cost factor

d: recreational services cost factor

- x<sub>1</sub>: The inflated educational cost factor (cost change factor)
- x<sub>2</sub>: The inflated research cost factor
- x<sub>3</sub>: The inflated cultural cost factor
- x<sub>4</sub>: The inflated recreational services cost factor

## RESULTS AND DISCUSSION

### **Results**

The focus of the present research is to study the organizational structure, job descriptions, identify activities, evaluation costs, costs of study and classify the types of costs in Zahedan PNU to provide a model for measuring and calculating the cost of the educational and research activities. This study which is conducted based on identifying types of costs, activity centers and analyzing the relation between the costs and related activities, the main purpose was to identify the behavior patterns of each cost and extract the related factors in the per capita function and the cost of activities.

The cost factors in this research are as follows:

The factor of variation of education costs: 11%

The factor of variation of research costs: 1%

The factor of variation of cultural costs: 7%

The factor of variation of recreational services costs: 5%.

## CONCLUSION

In the present economic situation of the country, the scientific management and cost control due to the severe restriction of funding must be the main concerns of the management in the higher education institutions. Being aware of the per capita cost of each student in each major regarding obtaining new licenses for new majors or the closure of some existing fields as well as the evaluation of the individuals and organizational units of the university is of great importance. This research can provide sufficient knowledge of per capita educational, research, cultural and recreational services through providing a comprehensive paradigm to measure the per capita cost in each major by applying inflated factors for each school year and provide effective control of operations and the implementation of the new system budgeting and new systems of performance evaluation.

### **Recommendations**

1. Budgeting and fund allocation for universities and centers must be performed based on the per capita cost and the cost of activities.
2. With regard to the relative autonomy of PNU, is proposed to determine the fixed and variable tuition fees in different fields based on the per capita costs of each student in related major.
3. The organization and management performance evaluation must be determined based on the analysis of actual cost or per capita cost and the deviation test and based on the real cost and real target cost.
4. With regard to the operational effectiveness of the use of modern methods of data processing and information technology in order to eliminate redundant activities and effective management practices it is recommended to use the new information technologies to perform activities of registration, exam, graduates and ...

Creating, opening, continuing and the closure of new fields of study must be based on price criteria and cost analysis of potential per capita cost in the field and based on the target cost.

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