

## Reviewing Organizational Problems with Respect to the Implementation of Activity-Based Costing in the Police University

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**Abstract:** Activity-Based Costing (ABC) which is an important management subject in production, service and governmental organizations is defined as a method that scales the final cost and the efficiency of the costs' activities, resources and goals. This modern system is a paradigm or revolution in the field of traditional costing. The goal of this study is to review organizational obstacles of implementing Activity-Based Costing (ABC) in the Police University. Unlike other countries that give a lot of attention to this system in our country and especially in the Police University it receives no attention and the reason is the lack of knowledge and support of the executives and employees from this system and also the shortage in professional work force in implementing this system and lack of satisfaction with this systems' performance. The goals of the Activity-Based Costing System are in the same line as the goals of the organization and the culture and strategy of the organization. Even though operators of this system may be very skilled but if the users and executives were not well-trained they face a great obstacle in utilizing this system. The research was incorporated in a scaling method and to test the study's hypotheses, the t-test with the assurance level of 95% was used. To prioritize the obstacles of effective implementation, the Choprov coefficient was utilized. The needed information were selected and collected through the distribution of a questionnaire after applying the opinions and comments of experts and professionals in the research topic in the field of Activity-Based Costing (ABC) to clarify and eliminate the vagueness of the questions and increase the validity with the stability of 90% between the professors of the financial department of the Police University. Results from this study show that there is a significant connection between applying Activity-Based Costing (ABC) with environmental, technical and human conditions. Therefore, it is suggested that with regard to these obstacles, measures be taken in order to eliminate them so that the application of Activity-Based Costing (ABC) is successfully done.

**Key words:** Activity-Based Costing (ABC), cost motives, overload, traditional costing system, goals

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### INTRODUCTION

Today because of the close competition between major and minor organization, the utilization of advanced and optimized methods is inevitable in order to be present in regional and global competition. The rapid advancement of information and communications, creation of globalization concepts and the efforts of economic corporations for gaining bigger shares in the market are all done to reach this goal. Therefore, the need for more accurate costing is derived from the nature of the rapidly globalizing competition. The Police University as the powerful generator of Police sciences is not exception. The Activity-Based Costing (ABC) Method as a desirable method for appointing overload costs has been in the consideration of organizations for a long time. The utilization of this method in service units is very beneficial because of the high amounts of overload costs and their work-consuming nature. ABC helps

governmental units including the Police University in identifying and appointing overload expenses and quantifying the costs of work forces for each activity. Together with helping the Police University to reach a clear picture of the efficiency of educational activities it leads to steps being taken toward increasing the efficiency and effectiveness of faculties and their employees and ultimately, optimizing the organization to fulfill its strategic goals (Weston, 1999).

Activity-Based Costing concepts were presented in the 1980s in response to the shortcomings of the traditional accounting system. A summary of these differences is presented in Table 1. In defining Activity-Based Costing, Hilton believes that this system is a method in which costs are appointed based on the ratio of the share of the consumed activities by each product from a cost tank to different products. Knowledge of costs in several levels, collecting costs in related centers and using multi-costing factors to appoint costs

**Table 1: A comparison between ABC system and traditional system**

| The ABC system                                                                                                                                                                    | Traditional system                                                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Its main goal is giving information regarding profits, customer satisfaction, clientele and competition on a global level                                                         | Its main goal is giving information regarding profits                                                                                                                        |
| It is prospective; what goals must be followed?                                                                                                                                   | It is past-oriented; how has the management worked?                                                                                                                          |
| Number of indirect cost centers is normally high                                                                                                                                  | Number of indirect cost centers is normally low                                                                                                                              |
| It is used for simple and non-standard production lines                                                                                                                           | It is used for simple, standard and ordinary production lines                                                                                                                |
| It is very desirable for scheduling and control and it provides accurate information in this field                                                                                | It is not sufficient for scheduling and controlling executives                                                                                                               |
| It provides the possibility to take correct and suitable measures using accounting information of the management                                                                  | It can be misleading for the executives' decisions                                                                                                                           |
| It treats all costs as product costs and considering the term perspective it treats all costs as coefficients                                                                     | It divides the costs into the two categories of product costs and period costs and long separates changing costs from fixed costs                                            |
| It uses financial and non-financial resources to divide costs                                                                                                                     | It usually uses financial bases to divided overload costs                                                                                                                    |
| It uses proper bases for each cost activity center and it has multi-function bases                                                                                                | It uses one or at most a few bases (usually direct wages or the machineries working hours) for dividing overload costs                                                       |
| It uses several centers that are appointed with regard to the amount of the activities                                                                                            | It has one or more cost centers to appoint costs in the level of the company or department                                                                                   |
| It calculates the finished cost of the product using direct raw material and the overload and it considers costs of technology, quality control and competition on a global level | It calculates the finished cost of the product using direct raw material, direct wages and factory overload and it practically does not apply impacts of advanced technology |

for production and services are the three main aspects of Activity-Based Costing (Wagner, 1969). In this costing method, different types of activities in a production, service or non-profit units are in the attention. Implementing Activity-Based Costing is more suitable in organizations and companies that have the following characteristics:

- Organizations and companies that have different products and offer different services
- Organizations that have high overload expenses with these costs to different products with regard to the production rate of each one were not equally attributable
- Organizations that use automatic advanced machinery or other fixed properties in producing or offering services and those that face problems in appointing overload expenses to the manufactured products with the old method based on direct work or the working hours of the fixed properties
- Organizations that offer two types of products or services; products that are manufactured with more difficulty but have higher profits and products that are easily manufactured but their production leads to less profits or loss

Using Activity-Based Costing (ABC) enables the Police University to have a clear picture of the educational efficiency. This method provides an opportunity to understand different motives of costs and consequently, better position for taking management decisions on minor and major subjects. Furthermore, using this method, the amount of the efficiency and activity of the university's employees can be determined.

The main goal of this study is to review present barriers in using Activity-Based Costing in the Police University. Because by analyzing the obstacles in utilizing Activity-Based Costing, better awareness from the obstacles facing the implementation of this system can be obtained and also steps can be taken to eliminate current problems.

**Statement of problem and research questions:** With regard to the above mentioned issues, the assumption is that administrators of the system and the executives, especially financial executives and the employees, must be in coordination for incorporating this system to correctly implement the Activity-Based Costing System. But to execute this task, several problems may arise and they can be presented in the form of the following questions:

- Has the lack of group work spirit prevented the utilization of Activity-Based Costing System?
- Has the lack of operating budget requirement prevented the utilization of Activity-Based Costing System?
- Could it be the unawareness and lack of training programs for the executives and the employees or not having sufficient education or experience or the irrelevance of their education that prevented the utilization of Activity-Based Costing System?
- Has the dissatisfaction in utilizing this system prevented the utilization of Activity-Based Costing System?

**Significance of the study:** Phenomena such as the expansion in global competition, advancement in information and communications and access to low-cost

information systems in the past couple of decades and also efforts in the economical and governmental units in order to acquire a global rating and enter international markets have made having approaches like customers' satisfaction, clientele and activity-based management inevitable. The evident matter is that success and constancy in activity in the new competitive environment and gaining grades requires the use of modern methods that puts a business in global scales. The Police University is not an exception.

The three approaches of being result-oriented, customer-oriented and market-oriented are among the basic principles of the fourth and the fifth economic and social development plans and the future of the management efficiency in police and disciplinary organizations and institutions. The effective tool that can increase the sufficiency of governmental, police and disciplinary organizations to improve the efficiency of documentation of the yearly activities results and defending attributable budgets in relation with the three above mentioned approaches is operating budget. The programming and strategic observation deputy of the president has changed the budgeting method in governmental offices to align with the global community and the international monetary fund as a major policy and therefore, based on Article 48 of the budget law in 2001 it was decided that the country's budgeting structure must be converted from program-based to operating in a way that it would provide the legal and informational needs and optimal attribution of financial resources for the ministries and governmental organizations. This was implemented since early 2001 and then in early 2005, the adopted budget of executive offices based on operating classification was approved in the Islamic Parliament and announced it to governmental organizations. Devising operating budget in executive organizations is not possible without having the Cost Accounting Method. Stages in devising operating budget in the cost accounting method include operation classification, choosing measurement unit, calculating costing unit, predicting operation size and calculating costs. The more accurate calculation of the costs and estimating the budget cannot be done without implementing the Activity-Based Costing System.

Financial accounting and reporting can play an important role as the tool for responsiveness among the chosen authorities and the persons of interest. On the one hand it helps the authorities to practice their duty by reliable financial reports and on the other, the citizens as claimers of right are helped in receiving their responses in their evaluation of that official. In other words, authorities who are chosen to run the affairs of major organizations

of the public sectors like the government and the municipalities that are directly elected through elections have the duty to be responsive to the citizens as the persons of interest in all their plans and actions. Both parties can practice their responsiveness duty using the accounting system and through adjusting and publishing financial reports with the needed and sufficient information and also revealing the truth. Therefore, the costing system must be applied and the best method to be responsive is Activity-Based Costing.

Like the yearly reports of the offices there are also several issues in relation with reporting for the government. To provide profit and loss statement and balance sheets in presenting the government's comprehensive financial activities, the consolidated accounting system is used. It seems that the commitment accounting system measures the operation results and special value by the processes of profit and loss statements and balance sheets in businesses. To provide profit and loss statements it is necessary to implement Activity-Based Costing System.

**Objective of the study:** This research tries to show the real obstacles in implementing the Activity-Based Costing (ABC) System in the Police University to eliminate these barriers by creating the suitable grounds and then take steps toward rapidly implementing the operative budget and this also increases public responsive power, better management efficiency and improvement in the way resources are attributed.

**Literature review:** In the year 1999, Alexander Mersereau, assistant professor in Montreal University, Canada did the research project in the Card Services Office of the National Bank of Canada and showed that in the services sector of the credit card, the Activity-Based Costing System is the best tool for the strategic management of the finished cost of the services. In the year 2004, Olga Lusic in the University of Tartu calculated the finished cost of offering services from the electronic banking channel using the Activity-Based Costing (ABC) Method and showed that electronic banking is more profitable than traditional banking. In the year 2001, the Coca-Cola Professor of the University of South Indiana, US, compared the profitability of bank commercial loans in Indiana using Activity-Based Costing System and showed that according to the Activity-Based Costing System, a more accurate finished cost can be reached in comparison with the traditional system and it can be very useful in executive level decision making. The Research Committee of Management Information Association suggested an Activity-Based Costing Model in the

banking system that same year (Canada *et al.*, 1996). In 2012, Mirasel Bahan did a research regarding the comparison between the traditional costing system with the Activity-Based Costing System in the University of Oxford and the result was that the responsiveness and efficiency the principals and the professors is better with the Activity-Based Costing System. Shooter of the University of Pretoria did a research on issues of implementing the Analysis-Based Costing System in South Africa in 2005 and recognized the reason as the lack of support from the government and lack of awareness about the system among the executives (Brausch and Taylor, 1997).

There were also several studies regarding the Activity-Based Costing System in Iran. For instance, Adel and Momeni (2011) did a research reviewing the possibility of designing a calculation model for the finished cost of bank deposits in Refah Bank using the Activity-Based Costing System.

**Research hypotheses:** To realize the main goal of the research for reviewing the organizational obstacles for implementing the Activity-Based Costing (ABC) System in the Police University, the following hypotheses are devised.

**Hypothesis one:** There is a significant relation between the issues of implementing Activity-Based Costing (ABC) System in the Police University and environmental obstacles.

In the primary study and interviews with experts, the most important factor regarding the environmental obstacles facing the implementation of Activity-Based Costing (ABC) System in the Police University, the following were presented as possible barriers:

- Lack of requirement for providing operative budget
- Shortage of financial and consulting experts to determine the factors for implementing activity-based costing
- Shortage in financial analysts to evaluate the implementation of Activity-Based Costing (ABC)
- Low awareness of Activity-Based Costing (ABC) among its users
- Shortcomings in the responsiveness of the organizations to the society

**Hypothesis two:** There is a significant relation between the issues facing the implementation of Activity-Based Costing (ABC) in the Police University and technical obstacles.

In the primary study and interviews with experts, the most important factor regarding the technical obstacles facing the implementation of Activity-Based Costing (ABC) System in the Police University, the following were presented as possible barriers:

- Lack of proper strategic planning for implementing the Activity-Based Costing (ABC) System
- Lack of change in the accounting system based on the finished cost and commitment accounting registration for implementing the Activity-Based Costing (ABC) System
- Lack of proper management information system for implementing the Activity-Based Costing (ABC) System
- Lack of policies regarding the implementation of Activity-Based Costing (ABC) System in the Police University

**Hypothesis three:** There is a significant relation between the issues facing the implementation of the Activity-Based Costing (ABC) System in the Police University and human factors as follows.

In the primary study and interviews with experts, the most important factor regarding the human obstacles facing the implementation of Activity-Based Costing (ABC) System in the Police University, the following were presented as possible barriers:

- Lack of sufficient training for executives and employees
- Lack of sufficient education in executives and employees of governmental and industrial accounting affairs
- The irrelevance of the education of the executives and the employees to implement Activity-Based Costing (ABC) System
- Lack of sufficient experience in the executives and employees for implementing Activity-Based Costing System

**Research conceptual model:** With regard to the studies that were done, interviews with the experts in the subject of implementing Activity-Based Costing (ABC) System, interviews with university professors, analyzing available study on the internet and the researches that were done, the following model was designed. On the first level there are the main effective factors in implementing the Activity-Based Costing (ABC) System (environmental factors, procedural-technical factors and human factors) and in the second level the sub-factors that are related to the main factors are presented. The conceptual model for implementing the Activity-Based Costing (ABC) System is as follows (Table 2).

Table 2: Diagram of obstacles facing the implementation of Activity-Based Costing (ABC) System

| Human                                                                                                       | Procedural-technical                                                                                       | Environmental                                         |
|-------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| Lack of sufficient training for the executives and employees                                                | Lack of proper strategic planning                                                                          | Lack of requirement for providing operative budget    |
| Lack of sufficient education for executives and employees in governmental and industrial accounting affairs | Lack of change in the accounting system based on the finished costs and commitment accounting registration | Shortage of experts in financial affairs and consults |
| Irrelevance of the education of executives and employees for implementation                                 | for determining the factors                                                                                | Lack of financial analysts                            |
| Lack of sufficient experience in executives and employees for implementation                                | Lack of proper management information system for implementation                                            | Lack of awareness in the users                        |
|                                                                                                             | Lack of policies in the Police University for implementation                                               | Poor responsiveness of organizations to the society   |

**MATERIALS AND METHODS**

In this study, the arrangements for devising the questionnaire were done based on theoretical studies. The questionnaire was the main tool for collecting the data of the present study. The questionnaire includes 13 questions and it is devised in a way so that there is no possibility for recognizing the replier. Questionnaires were sent to the professors and executives of the Police University, especially the financial and official department of the university and 19 replies were received. In this study to evaluate the factors regarding the obstacles of utilizing Activity-Based Costing (ABC) that were presented in the form of the study's hypotheses, a questionnaire was devised and given to the subjects. The subjects were asked to fill the questionnaires using the Likert scaling standard (1 for very low to 5 for very high). Using the retest method, the reliability of the questionnaire was tested. Therefore, the questionnaires were distributed twice between the members of the pilot sample in different times and by comparing the results it was determined that there was not any notable deviation between them. The validity of the questionnaire was also confirmed at a desirable level.

**RESULTS AND DISCUSSION**

To test the research hypotheses, the non-parametric statistics methods were used under the name of the t-test and the rejection level of the studys' null hypotheses was considered as 5% possibility. Research hypotheses were designed in the statistical assumption test in the form of  $H_0$  and  $H_1$  and for each of the hypotheses of the research, a statistical assumption test was designed in the following way:

$$H_0: \mu \geq 3$$

$$H_1: \mu > 3$$

The statistics of testing the hypothesis has a t-distribution. Information regarding the amount of the test (critical amount and the observed amount) regarding each of the hypotheses of the research is presented in Table 3.

Table 3: Results of testing the hypotheses of the research

| Variables            | Hypothesis | t-critical |
|----------------------|------------|------------|
| Environmental        | $H_1$      | -1.645     |
| Procedural-technical | $H_2$      | -1.645     |
| Human                | $H_3$      | -1.645     |

Table 4: Descriptive statistics for the variables

| Hypothesis | Average | SD | Confirmed | Rejected |
|------------|---------|----|-----------|----------|
| One        |         |    | *         |          |
| Two        |         |    | *         |          |
| Three      |         |    | *         |          |

**Results of hypothesis testing:** This research included three hypotheses that dealt with the investigation of obstacles facing the implementation of the Activity-Based Costing (ABC) System in the Police University. All the above mentioned hypotheses were tested in the confidence level of 95% and they were all confirmed. A summary of the statistical calculations is presented in Table 4.

**CONCLUSION**

Operative budget requiring the operative organizations needs to focus on the results of the programs, efforts in improving effectiveness, efficiency and responsiveness of the governments' plans. This system tries to help the executives for improving the efficiency and the programs through better production and presentation regarding the effectiveness of the government's expenses and plans and its goal is to create a clear bond between resources and results. This system works to purposefully attribute credits to the programs, (Ekbatani and Bayat, 2001) clarify the budgeting process, create a connection between budgeting and results of the work and evaluate the effectiveness and efficiency of the plans and activities. One of the basic principles of operative budgeting is the use of a proper cost system and the ABC System with regard to its advantages can help organizations in the better implementation of the operative budgeting. Trying to increase the efficiency and effectiveness, companies tend to use the traditional Activity-Based Budgeting (ABB) which requires an accurate awareness of the activities and as it was stated, one of the principles of Activity-Based Budgeting is the principle of the finished cost and Activity-Based Costing

(ABC) gives the possibility for the costs related to each activity to be accurately determined and be used in order to evaluate the efficiency and effectiveness of the activities of the organization (Raffish and Turney, 1991).

### **SUGGESTIONS**

With regard to the final conclusion from the study and the determination of issues facing the implementation of Activity-Based Costing (ABC), the following suggestion are presented with respect to the results of the research divided by each of the obstacles' hypothesis:

Professional training in relation with Activity-Based Costing (ABC) must be in the order of tasks in the financial department of the Official and Financial Faculty of the Police University.

The type of the training regarding Activity-Based Costing (ABC) must be in a way to provide expert skills for services in this field.

Activity-Based Costing (ABC) is a system that causes drop in the costs and also a more accurate calculation of the finished price of the products or services and therefore it is suggested to organizations, especially the Police University to replace the measurement and determination of finished cost systems with the Activity-Based Costing (ABC) System.

With regard to three hypotheses, regarding the relation between environmental, procedural-technical and human factors with the obstacles facing the implementation of the Activity-Based Costing (ABC) System, most of the repliers choose the options of very

high impact and high impact and with regard to the results from the t-test it can be said that there is relationship between environmental, procedural-technical and human factors with the obstacles facing the implementation of the Activity-Based Costing (ABC) System. Therefore, it is suggested that the finished cost system be replaced by the Activity-Based Costing (ABC) System in the University.

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