

## FULL COSTING AT UNIVERSITIES: A LITERATURE REVIEW

### METODA POTPUNIH TROŠKOVA NA SVEUČILIŠTIMA: PREGLED LITERATURE

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**Abstract:** *This paper reviews literature on full costing at universities with focus on development of full costing system and practices of universities that have successfully develop this system. The topic of full costing at universities is very important and actual because universities are, due to decrease of budgetary resources, forced to raise funds from new resources like for instance EU funds. Furthermore, universities will raise funds from new resources only if they allocate costs under some costing method. For this reason full costing method at universities is crucial for financial sustainability of universities. In this paper author presents relevant literature on full costing, more precisely Activity Based Costing method, at universities.*

**Key words:** *full costing, ABC method, University*

**Sažetak:** *Ovaj rad se bavi pregledom literature vezane uz metodu potpunih troškova na sveučilištima s fokusom na razvoj metode potpunih troškova kao i praksu sveučilišta koja su uspješno implementirala navedenu metodu. Tema obračuna potpunih troškova na sveučilištima je izuzetno važna i aktualna jer su sveučilišta primorana, zbog opadajućih proračunskih sredstava, prikupljati sredstva iz novih izvora kao što su fondovi Europske unije. Nadalje, sveučilišta se mogu financirati iz novih izvora samo ukoliko raspoređuju svoje troškove po nekoj metodi obračuna troškova. Iz tog je razloga metoda potpunih troškova na sveučilištima ključna za održavanje njihove financijske stabilnosti. U ovom radu autor prikazuje relevantnu literaturu o metodi potpunih troškova, preciznije ABC metodi, na sveučilištima.*

**Ključne riječi:** *metoda potpunih troškova, ABC metoda, Sveučilišta*



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## **1. Introduction**

In the last twenty years, requirements and expectations on universities, both in teaching and research activities are growing progressively. Changes in university culture associated with market orientation, greater competition of faculties, and so on, mean that the role of universities is shifting towards a greater commercial orientation. This carries increase in costs of their activities and requires additional funds other than those provided in the state budget. Therefore, many universities are competing with their projects for external funds, for instance for EU funds. If they want to have competitive projects, universities have to identify full costs of their projects. In other words, universities have to develop and implement full costing system that will identify, calculate and allocate all direct and indirect costs by their objects more precisely per activities and/ or projects.

Majority of universities that have successfully implemented full costing system at their universities have chosen Activity Based Costing (ABC) method. Regarding that full costing is considered to be ABC method. Full costing system at Universities carries many benefits and most important are: a more systematic approach to activity analysis and costing, a more efficient internal resources, improved strategic decision-making based on better understanding of investments decisions, benchmarking possibilities within the sector and an enhanced ability to negotiate and price activities which lead to higher cost recovery of projects costs and contribute thus to financial sustainability. [1] But despite all mentioned benefits, still only a small number of universities have developed full costing system in their institutions. Full costing is a complex process that has to be implemented appropriately according to specific need of the university and only on that way universities can enhance their financial capacity.

From all before mentioned, it is obvious that full costing is today very important topic. Nevertheless, until today very little literature is written about development and implementation of full costing. Hence, the purpose of this paper is to comprehensively and systematically present relevant literature in the field of full costing at universities. Also, author will critically highlight contribution of each paper. The review was restricted to English-speaking accounting journals and European University Association publications that have been published in the last eighteen years.

## **2. Literature review**

First papers that have reported about development of ABC system into the public sector, more precisely at Universities, were written during 1990s in the United Kingdom (UK). Mitchell, 1996 describes in his paper results of the survey of the usage of ABC method in UK universities. His primary goal was to clarify possible benefits and weaknesses in the implementation of ABC method at university by using ABC exercise. The survey showed that the main benefits could be: improved understanding of costs, more rational allocation of costs, central services more accountable, aids decision making. [2] On the other side, main problems could be in:

agreeing drivers, time and implementation costs as well as lack of understanding of the ABC method. [2] Main contribution of this paper is in showing that the actual penetration of ABC method at universities is very low but implementation of this accounting method can provide information that can lead in the end to better decision making and efficient resource allocation.

Goddard, A. and Ooi, K., 1998 in their paper made step forward because they prepared a case study using ABC methodology that was applied to library services at the University of Southampton. The result of their study showed substantial differences in the allocation of the central overheads cost as between academic faculties using the ABC model and existing system. [3] The authors argue that although the ABC approach may overcome some of the problems of overhead allocation and improve the economic efficiency of organizations, there are significant problems with its practical application. In their study authors concluded that main benefits of ABC model are: provide more equitable overhead allocation than traditional systems as it ensures that faculty is charged for its actual consumption of central resources, enable allocated costs to be both verified and refuted. [3] However from their case study they concluded that in practice ABC model is less efficient than in theory. Also, it is very expensive to develop and maintain such system. But their case study was mainly concerned with developing a methodology to improve efficiency and did not test the applicability of the system to faculties across the board. Another relevant paper that deals with application of ABC in public sector is the one by Mullins and Kurt Zorn, 1999. They focused on significant obstacles that must be overcome before ABC can be effectively implemented in public sector entities and that also includes universities. Moreover, their paper provides an analysis of the appropriateness and/ or limitations of ABC in public sector. They concluded that in most instances ABC is not appropriate for public sector applications due to the nature of publicly provided services. [4]

One year later (in 2000) Paul Cropper and Roger Cook wrote a paper that describes the current costing within the higher education sector, reviewing recent published literature from the year 1993 until the year 1998 and analyzing the progress made by institutions in implementing Activity Based Costing system. They highlighted that ABC is applicable to all educational institutions but requires some adjustments. The findings of their survey suggest that institutions have made little progress to date in moving towards ABC because only 9% of respondents (UK universities) had introduced simplified form of ABC within their institution. [5]

In the USA, the State of Kansas, Cox, Downey and Smith, 2000 used the ABC model to unify the objective of teaching and research staff with those of departments, providing information for the assignment of resources to departments, faculties and universities. In their paper they presented ABC model for the Kansas State University. Overall conclusion of their model is that this is a powerful tool for departments, colleges and universities in helping to assess their budgetary and programmatic issues. [6]

In contrast to before mentioned papers, Broad and Crowther, 2000 present ABC method as an inappropriate technique for universities in its original form. Their main reason for that point of view is: ABC does not provide relevant information in the case of identifying what costs should be saved if certain action were pursued because of complex interwoven nature of costs at universities. [7] Also, they emphasize that universities that use ABC in most cases use costing model on faculty level because its simplicity and not on the course level. The overall conclusion of their paper is that universities that had consider or used ABC method had not in fact used ABC. Their opinion is that universities in reality use a hybride somewhere between traditional absorption costing and activity based costing. [7] Furthermore, authors have presented some arguments for different costing systems within universities and they put in forward the Theory of Constraints as an alternative costing mechanism.

Previously presented paper can be connected with paper from Valderrama and Sanchez, 2006. Their paper analyses the advantages and disadvantages of costing model for Spanish universities. Authors also propose a new model which uses the best of the traditional and the ABC method. Through their model they meet two objectives. The first is to manage more efficiently the resources of institutions by being able to identify activities and their costs, and by being able to obtain information on the results achieved by the departments and faculties.[8] The second objective is to exercise proper control over the legal execution of the budget. [8] They highlighted that universities in the Spain have just started to developed theoretical costing models while in the UK the universities have implemented costing models.

Moreover, relevant paper for this literature review is the one by Lakshmi U. Tatikonda and Rao J. Tatikonda, 2001. Mentioned authors also wrote a paper that deals with implementation of Activity Based Costing in higher education institutions. They concluded that universities are in a state of turmoil and fiscal crisis and that implementation of ABC system can help them with tighter financial management and better resource allocation. In their paper authors has shown on simple example stages of Activity Based Costing application to higher education. Several problems occurred with their simple ABC model. First, costs were allocated on a single volume basis with no distinction between fixed and variable costs, then the methods failed to account for students who take courses outside their college and the model assumed that all courses consume the same activities in the same proportion when in fact some programs may be subsidizing others. [9] Nevertheless, at the end of their paper authors concluded that ABC system may provide benefits to academic institutions, such as: better cost information, better identification of resource needs, better distribution of scare resources, better course and program mix, better cost control and better public relations tool. [9]

All before presented paper reviewed ABC method on national level (UK, Spain, US) while the Allen Consulting Group in September 2008 analyzed in their paper the full costing at universities in Australia and compared this with funding in United Kingdom, Canada, New Zealand and USA. In this paper it is highlighted that the most important argument for moving to a model of full costing for university research is that universities must be able to perform research of quality on a financially

sustainable basis. [10] Also, a guideline for costing and charging university research in Australia is presented as well as the survey of university R&D expenditure.

Most recent publication that deals with full costing at the European universities is the study that the European University Association (EUA) published in the year 2008. Since 2005, EUA had been examining the issues of funding, autonomy and accountability in 800 European universities in 46 countries. The importance of EUA study, 2008 is in providing information and empirical data for debate on financial sustainability from an institutional perspective and analyzing development of full costing in countries of the European Union. This study revealed that University of Liverpool (UK), University of Twente (Netherlands) and University of Coimbra (Portugal) have developed and applied full costing to all structural units of the university both at the university level as well as the level of its main structural units. Moreover, study showed that the full costing is at the stage of development in Sweden, Ireland, Germany, Austria and Spain. On the other hand, countries such as Estonia, Czech Republic, Turkey, Poland and Slovenia have no time schedule for implementing full costing in their universities.

In the Republic of Croatia there is no movement towards full costing at universities and main source of financing for universities is state budget. [11] Nevertheless, the University of Zagreb is included in the activities of the EUA in relation to the project of settlement on full costs and is participated in the work of all recently held workshops and events. [11]. Dražić, Dragija and Broz Tominac, 2011 wrote a paper that presets the theoretical basis for successful implementation of full costing methodology at University of Zagreb. With this paper the authors showed the current situation in budgetary accounting regarding cost tracking, recording and reporting about costs since the University of Zagreb and its constituents are budgetary users. [12]

All the above mentioned papers can help in gaining a better understanding of full costing respectively ABC method at universities. Moreover, all of them provide very important information that can be used for successful implementation of ABC method at universities.

It is obvious that researcher from the United Kingdom have dominance in the field of development full costing method at universities. This might be rooted to the fact that these regions were the first that implemented ABC method at universities. The high proportion of research come also from the US and Spain. Nevertheless, a further research on this field is desirable.

### **3. Conclusion**

As higher education continues to function in a period characterized by limited resources and constraints on growth, it is clear that an assessment of the cost of institutional activities will become an ever more important component of every management decision. [5] For objective assessment of the cost universities have to develop full costing system that will give accurate and up to date cost information. A technique that is commonly used to establish full costing system at universities is

Activity Based Costing method and because of that most of authors write about benefits, weakness, opportunities, methodology and practices of ABC method at universities.

Reviewed papers indicate that the development of full costing system at universities differs from country to country. Most of papers on that topic are written in the United Kingdom but with different point of view. While Mitchell, 1996 describes benefits and weakness of ABC method, Goddard and Ooi, 1998 put focus on ABC methodology. On the other hand Cropper and Cook, 2000 analyze the progress made by universities in UK and they concluded that intuitions have made little progress to date in moving towards ABC method.

The contrast to all reviewed paper is the paper that Broad and Crowther wrote in November 2000. These authors argue that ABC method is not appropriate for universities. Their paper has put some arguments for different costing system within university, particularly whether school costing and course costing can meet the requirements of a university facing a challenging business environment where significant pressure is being exerted on the financial stability of some universities. [7] Spanish authors Valderrama and Sanchez, 2006 propose new costing model for universities that is somewhere in the middle of traditional costing and ABC costing and that point of view is very close to Broad and Crowther. Lakshmi U. Tatikonda and Rao J. Tatikonda, 2001 in their paper presented ABC application in the higher education institutions and they summarize main benefits that ABC might provide to academic institutions. Allen Consulting Group in September 2008 analyzed in their paper the full costing at universities in Australia and compared this with funding United Kingdom, Canada, New Zealand and USA.

For this literature review EUA study is also very important because it presents experiences of universities that have implemented ABC method as well as drivers for future development of ABC method. In addition, this study explains full costing system as a complex process that has to be implemented appropriately according to specific needs and context of the institutions. Therefore, it is important that universities themselves have a long term goals in mind when designing their full costing system.

Overall conclusion of this paper is that universities are being forced to accept real pressure of a competitive market place and because of that all universities will have to follow costing methods that are present in the private sector. The most important contribution of this paper is a systematic presentation of relevant papers that argues about full costing at universities in the recent accounting journals between 1996 and 2011. Moreover, this paper could be a starting point for further discussion and research in this field and can be use as a useful source of information for universities that are in initial phase of development full costing system.

#### 4. References

- [1] European University Association (2008): Study "Financially sustainable Universities – Towards full costing in European Universities", available at [www.eua.org](http://www.eua.org); (Accessed: 20-04-2012)
- [2] Mitchell, M. (1996) Activity Based Costing in UK Universities. *Public money & Management*, 16, 1, January-March, pp. 51-57
- [3] Goddard, A., Ooi, K. (1998) Activity Based Costing and Central Overheads Cost Allocation in Universities: Case Study. *Public money & Management*, 18, 3, July-September, pp. 31-38
- [4] Mullins, D. R., Kurt Zorn, C. (1999) Is Activity Based Costing Up to the Challenge When it Comes to Privatization of Local Government Services? *Public Budgeting & Finance*, Summer 1999, pp. 37-58
- [5] Crooper, P., Cook, R. (2000), Activity-Based Costing in Universities-Five Years On, *Public Money & Management*, 20, 2, April-June 2000, CIPFA, pp. 61-68
- [6] Cox, K. S., Downey, R. G. and Simth, L. G. (2000) Activity Based Costing in Higher Education – Can it Work? Paper presented to the annual conference of the Association for Institutional Research, Cincinnati
- [7] Broad, M., Crowther, D. (2000) Activity Based Costing in universities – an inappropriate technique?, Discussion paper in *Accounting and Management Science*, Number 00-161, ISSN 1356-3548, pp 1-27
- [8] Valderrama, T. G., Sanchez, R. (2006) Development and Implementation of a University Costing Model. *Public money & Management*, September, pp. 251-255
- [9] Tatikonda, L. U., Tatikonda R. J. (2001), Activity Based Costing for Higher Education Institutions, *Management Accounting Quarterly*, Institute of Management Accountants, pp. 19-27
- [10] The Allen Consulting Group (2008) Recognizing the full cost of University research. September 2008. Issues Paper. Report to Department of Innovation, Industry, Science and Research. pp. 1-18
- [11] Dražić Lutilsky, I., Dragija, M. (2011) Full costing method – Trend in European Universities. Paper is presented in Istanbul on EBES Conference and is in the publication phase.
- [12] Dražić Lutilsky, I., Dragija, M. and Broz Tominac Sanja (2011) Towards full costing at the University of Zagreb. Paper was presented at the EBES conference held on October 13-15 in Zagreb.



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