

IMPORTANCE OF MANAGEMENT REPORTS IN THE DECISION-MAKING PROCESS IN THE HIGHER EDUCATION SYSTEM

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Abstract

In the last fifty years the importance and scope of the higher education institutions has changed drastically. Higher education institutions are faced with growing demands both in teaching and research activities. Moreover, higher education institutions have entered a wide range of financial and institutional reforms that mostly relate to the process of internalization, strengthening of institutional autonomy, increasing competitiveness and achieving financial sustainability. Quality implementation of mentioned reforms demands that managers use quality and comprehensive information, not just from external reports but also from internal management reports. In the context of the aforementioned issues, this paper explores the theoretical and practical importance of management reports in the decision-making process in the higher education system. Authors have examined the usage of management reports within higher education institutions in Croatia through empirical research that was conducted in the year 2014. The questionnaire was sent to all HEIs in the Republic of Croatia, more precisely to the Deans of HEIs. Appropriate statistical methods, including descriptive statistics, inferential statistics and regression analysis, were used for processing and interpreting primary data. Moreover, the obtained results were also compared with the results of similar previous research. The authors have confirmed the main hypothesis that management reports are not sufficiently used in the decision-making process at Croatian higher education institutions.

Keywords: *higher education institution, management reports, Croatia, statistics*

JEL Classification: H52, H75, I2

1. INTRODUCTION

Today, higher education institutions are increasingly seen as the main “drivers of the economy” and are the key for ensuring new knowledge through research and innovation process as well as through continuous training of the workforce. However, higher education institutions are also involved in a wide range of financial and institutional reforms that are carrying many changes in the higher education systems. These reforms are closely related to the internationalization of the activities of higher education institutions, strengthening of institutional autonomy, reduction of public sources of funding and the introduction of new financing schemes as well as increasing of competitiveness in higher education system (Kyvik, 2004; OECD, 2008a; OECD, 2008b; OECD, 2008c, Sursock & Smidt, 2010).

Internationalization that is primarily measured by the number of foreign students and teachers on exchange and the number of agreements with foreign universities is viewed as an important strategic element in the development of higher education institutions. Furthermore, institutional autonomy implies that the internal organization structure and management of the university do not fall under the state regulations as well as internal management of financial resources. Also, institutional autonomy assumes that they are autonomous in the following: mode of generating revenues from various sources other than the state budget, employment of staff, study conditions and the freedom of scientific research and lectures (Estermann & Nokkala, 2009). In other words, institutional autonomy allows higher education institutions self-management without external interference of the government. However, in the practice any higher education system is not completely autonomous of external control. But with the increase in the autonomy increase also responsibility of higher education institutions for management and achieved results. Moreover, there are changes in the financing of higher education institutions since public resources of funding are no longer sufficient to cover all costs (Estermann & Bennetot Pruvot, 2011). Therefore, higher education institutions are forced to seek new sources of funding in order to be competitive and to act on the financial sustain-

able level, and thereby financing models in higher education are also changing. Leading European University has highlighted financial sustainability as a key factor for the competitiveness of higher education in the 21st century (Estermann & Claeys-Kulik, 2013).

A precondition for effective and responsible management as well as maintenance of financial stability and autonomy of higher education institutions is a high quality accounting information system that ensures and provides detailed, accurate and timely information (Vašiček, V. & Dragija (ed.); 2011). Furthermore, only higher education institutions that have developed reporting systems, external and internal, can see whether they manage on the financial sustainable basis and that allows them to follow the reform process in higher education. Due to aforementioned, further in the paper we have examined accounting reporting systems of higher education institutions in Croatia. Especially we have researched usage of internal or more precisely management reports within higher education institutions in Croatia through empirical research that was conducted in the year 2014.

2. ACCOUNTING REPORTING SYSTEMS OF HIGHER EDUCATION INSTITUTIONS IN CROATIA

Accounting information that are processed within the accounting information system are presented in the certain standardize or non-standardize way in the form of reports. Usually in the literature we can distinguish two main set of reports (Vašiček, D.; 2007, 74):

- **external financial reports** - prescribed or standardized reports that include synthesized and comprehensive information which meet the needs of most users in the environment of the reporting entity, and
- **internal financial reports** – non-standardize reports that are prepared according to the requirements of internal users, most often management, within the reporting entity.

External financial reports are the product of the financial accounting that is prescribed by the normative framework of every country for certain business entity. Main characteristic of financial accounting is processing information that

relates to past business events (Vašiček, V. & Dražić Lutilsky; 2007). Higher education institutions are obligatory to prepare external financial reports but the set of these reports depends on the type of higher education institutions. Precisely, higher education institutions in Croatia can be registered as budgetary users, non-profit organizations or companies. Due to that they are obligatory to apply different normative framework. In the table below it can be seen legal framework for financial reporting of higher education institutions in Croatia as well as set of external financial statements.

Table 1. Normative framework of Higher education institutions in Croatia and set of external financial statements

| Type of higher education institutions in Croatia | | |
|--|--|--|
| Budgetary users (public HEI's) | Non-profit organizations (private HEI's) | Companies (private HEI's) |
| Regulation on financial reporting in budgetary accounting (Official Gazette, 2011) | Regulation on accounting of non-profit organizations (Official Gazette, 2008) | Accounting Act (Official Gazette, 2007) |
| External financial reports: | External financial reports: | External financial reports: |
| <ul style="list-style-type: none"> • Balance sheet • Statement on revenues and expenses, receipts and expenditures • Statement about changes in values and volumes of assets and liabilities • Notes to financial statements | <ul style="list-style-type: none"> • Balance sheet • Statement on revenues and expenses • Notes to financial statements | <ul style="list-style-type: none"> • Balance sheet • Income statement • Cash flow statement • Statement on changes in equity • Notes to financial statement |

Source: Authors

Through analysis of external financial statements of different higher education institutions in Croatia we have detected major differences in the form and the content of financial statements of higher education institutions that primary result from applied legal framework. Public higher education institutions are applying modified accrual basis of accounting and because of that have different elements of basic financial statements. In relation to the application of full accrual basis this accounting model is marked with following adjustments (Vašiček, D., et al.; 2009):

- Revenues of public sector entities are recognized when the cash is received therefore revenues are based on cash basis.
- Expenses of current non-financial assets are recognized at the time of purchase, therefore not at the time of actual consumption.

- The costs of procurement fixed asset with small value are not capitalized, because they are entirely presented as expense at the time of purchase.
- The costs of procurement fixed asset are not capitalized and they are not systematically apportioned on a time or functional basis as expenses during the period of useful life.
- Increase in assets during the procurement fixed non-financial assets without the costs (capital received donations) are not recognized as revenue but directly increased the sources of ownership (public capital).
- Spending fixed non-financial assets during the administration estimated life is expressed as the expense of the sources of ownership (public capital) using proportional method of value adjustment.
- Residual value of fixed non-financial asset that is sold or decommissioned is not reported as an expense that arises from the fact that the total expense was recognized at the time of purchase.
- The changes in value and volume of assets and liabilities are not reflected in the financial result but they directly reflect on the value of sources of ownership (public capital).

While on the other side private higher education institutions, that are register like non-profit organizations or companies, are using full accrual basis in accounting that assures full and comprehensive information for external users. It is important to highlight that external financial reports assure synthesized information that are prescribed by the normative framework but those information are insufficient for the purpose of management in the higher education systems. Preparing of internal or in other words management reports is in the domain of internal users, precisely management of higher education institutions, and therefore those reports are non-standardize and cannot be prescribed by the law (Vašiček, Dragija (ed.); 2011, 28). The methodological basis for preparing of internal reports is known and developed in detail in the profit sector, and assumes instruments of cost accounting and management accounting (Horngren, 2005). According to Vašiček, D. (2007, 92) methods, techniques, instruments, cost concepts and detailed processes of cost accounting and management accounting, which are scientifically and professionally developed and deeply embedded in the management process in the entrepreneurial sector, can be to a large extent applied in the public sector as well to higher education insti-

tutions. In that context, management reports could be used for different areas in decision making processes; such as:

- the process of planning and preparing financial plans and budgets;
- the control and cost reduction;
- the fixing of prices and charges;
- the program evaluation and performance measurement;
- the diversity of choice of economic decisions.

The goal of the existing accounting information systems of Croatian higher education institutions is primarily in completing the legal requirements in terms of external reporting, and not in providing quality information to internal users for efficient management (Budimir; 2010, 18). Therefore, it is common that in addition to external reporting there is a need for the development of quality management reports system. Those reports are prepared primarily for management, containing the target and detailed information about costs, revenues, assets, liabilities, and their structure. As well as the effects they have on long-term sustainability of programs, projects, activities, processes, etc. (Ministarstvo financija; 2012).

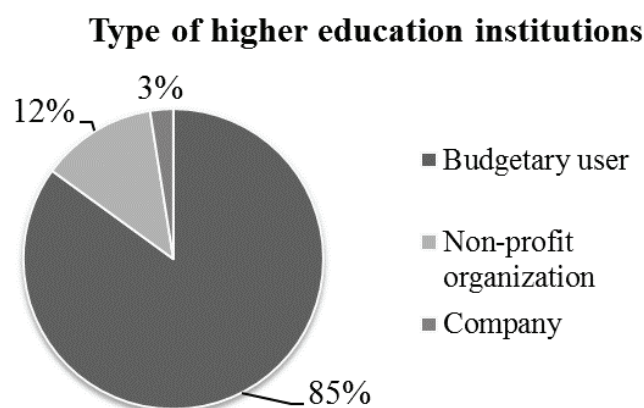
So far has not been given much attention to the issue of internal reporting and the quality of accounting information in the higher education system in the Republic of Croatia. Only author Dražić Lutilsky (2006, 159-229) has conducted an empirical research that was focus on the application of cost accounting and management accounting in the public higher education institutions in the Republic of Croatia. Specifically, the goal of the mentioned research was to evaluate the level of use of cost accounting and management accounting as bases for the providing information that are necessary to the management in the decision making process and as a prerequisite to improve the management process in higher education institutions (Dražić Lutilsky; 2006, 163). The main conclusions of this research can be summarized as the following (Dražić Lutilsky; 2006, 201-229): there is a low use of cost accounting and management accounting instruments within HEI's; accountants show a greater knowledge about elements of cost accounting and management accounting for management purposes in relation to the management of higher education institutions; internal reporting system is not developed in detail, but still accountants are recording some additional data in order to be able to prepare internal management

reports, mostly internal reports about the prices of higher education services while they hardly draw up internal reports about the operations of the department, internal reports of performance measurement of programs and service; management of higher education institutions is not sufficiently informed about the possibilities as well as importance of using instruments of cost accounting and management accounting in the decision making process; internal reports are usually made periodically, usually annually and/or semi-annually; information requirements of public management and administration of higher education institutions are not high.

3. EMPIRICAL RESEARCH OF MANAGEMENT REPORTS USAGE WITHIN HIGHER EDUCATION INSTITUTIONS IN CROATIA

In order to investigate the usage of management reports within higher education institutions in Croatia, authors have done statistical analysis of data that were obtained through empirical research that was conducted in the year 2014 for the purpose of writing doctoral thesis named Internal reporting in the function of managing Higher education institution in the Republic of Croatia, author Martina Dragija. More precisely, empirical research was conducted in the year 2014 among the all higher education institutions and questionnaire was aimed to Deans of HEI's (Dragija, 2014). From the total 135 HEI's in the Republic of Croatia, 40 HEI's answered on questionnaire for the Deans (responsive rate 29.63%). So, a response rate goes around 30% which is remarkable high for such kind of research.

Distribution of respondents by type of higher education institution (budgetary user, a non-profit organization or a company) is shown in the Figure 1. So, it is obvious that from the sample of HEI's most of them are budgetary users with 85%, followed by non-profit organizations with 12%, and just 3% are companies. That was in a fact expected since most of HEI's in Croatia is budgetary users.

Figure 1: Surveyed HEI's according to the type of organization

Source: Data from questionnaire (Dragija, 2014)

Further we have tested the hypothesis that the existing accounting information system of the higher education institution in Croatia focused primarily on meeting the legal requirements in terms of external reporting. For that purpose we have used one-tail z test about a population proportion for the year 2014. It is assumed that more than 75% of management believes that the existing accounting information system of the higher education institution focused primarily on meeting the legal requirements in terms of external reporting. Thus the test hypotheses are: $H_0... p \leq 0.75$, $H_1... p > 0.75$. Conducted statistical test confirmed that assumption. In other words we reject the null hypothesis at significance level of 5% (test statistic = 1.826, p-value = 0.0339). Consequently, at significance level of 5% we reject the assumption that 75% or less of managers in higher education institutions agree that the existing accounting information system of the higher education institution focused primarily on meeting the legal requirements in terms of external reporting. Respectively, we can accept the assumption that the percentage of managers who believe that the current accounting information system of the higher education institution focused primarily on meeting the legal requirements in terms of external reporting is higher than 75%.

Moreover, we tested hypothesis that more than 55% of management of HEI's consider that the information presented in the external financial statements are not sufficient to manage the reform processes in higher education. Thus the test hypotheses are: $H_0... p \leq 0.55$, $H_1... p > 0.55$. Conducted statistical test confirmed that assumption. Therefore, we rejected the null hypothesis at significance level of 5% (test statistic = 1.907, p-value = 0.0283). At significance

level of 5% we rejected the assumption that 55% or less of higher education institutions does not agree that the information presented in the external financial statements are sufficient to manage the reform processes in higher education (funding reform, reforms to increase competitiveness, reform related to internationalization activities, etc.). So, we can accept the assumption that the percentage of managers that does not agree that the information presented in the financial statements are sufficient to manage the reform processes in higher education (funding reform, reforms to increase competitiveness, reforms related to internationalization activities, etc. .) is higher than 55%.

In the table below, we have presented obtained results about significance of management reports for the different purposes according to the opinion of surveyed managers.

Table 2: Assessment of the significance of management reports of HEI's by the surveyed management

| Significance of management reports for the purpose of: | Arithmetic mean | Standard deviation | Mode |
|--|-----------------|--------------------|------|
| cost planning | 4.47 | 0.86 | 5 |
| cost calculation | 4.24 | 0.82 | 4 |
| cost control | 4.38 | 0.82 | 5 |
| price determination | 3.52 | 1.23 | 4 |
| performance measurement | 3.41 | 1.27 | 4 |
| monitoring the performance of provided services | 3.50 | 1.41 | 4 |
| measurement of business results | 4.30 | 1.02 | 5 |
| internal audit | 3.85 | 1.39 | 5 |

Source: Data from questionnaire (Dragija, 2014)

From the arithmetic means it is evident that the surveyed managers at HEI's give the highest grades to significance of internal reports for cost planning, cost calculation, cost control and measurement of business results. The lowest grades they give for the significance of internal reports for the purposes of price determination and performance measurement.

Further to above, appropriate correlation and regression analysis was conducted in order to estimate impact of internal reports about performance indicators of HEI's (independent variable, X) on average significance of internal reports for the purpose of performance measurement (dependent variable, Y). All

linear regression model assumptions were met (Žmuk; 2015) in the observed simple linear regression model and are available upon a request.

Figure 2: Correlation matrix

| | Y | X |
|---|--------|-------|
| Y | 1.000 | |
| X | 0.606* | 1.000 |

* - correlation is significant at the 0.01 level (2-tailed)

Source: Research results.

According to the correlation matrix, given in Figure 2, it can be concluded that the decision for using internal reports about performance measurement will have positive statistical influence on the average significance of internal reports for the purpose of performance measurement. From the above we can inductively conclude that a decision on the use of internal reports positively affect the significance of internal reports.

4. CONCLUSION

In the past fifty years higher education systems have experienced radical changes. In fact, higher education institutions are now still faced with additional demands and expectations both in an educational and research context. In order to respond successfully to mentioned demands of its users higher education institutions have been forced to move to the processes of institutional and financial reforms as well to the process of implementation of entrepreneurial business principles in the higher education system. Therefore, it is necessary to change existing decision making process by introducing greater usage of internal management reports.

The results of conducted statistical analysis have shown that the current accounting information system of higher education institutions in Croatia is primarily focused on complying with legal requirements regarding the external reporting. Moreover, it can be concluded that the opinion of management of higher education institutions is that the existing accounting information system is focused primarily on assembly of legally prescribed external reports. Internal reports at higher education institutions are generally a result of the current claims of management, rather than a systematic and developed internal

reporting system. Further to aforementioned issues, it is necessary to highlight that surveyed managers at HEI's give the highest grades to significance of internal reports for cost planning, cost calculation, cost control and measurement of business results and they are not familiar with the significance of internal reports for the purposes of price determination and performance measurement. Therefore, it can be concluded that management of higher education institutions in Croatia need to put more focus on internal reporting system in order to be able to follow trends in management of higher education institutions of developed European countries. The authors have confirmed the main hypothesis that management reports are not sufficiently used in the decision making process in Croatian higher education institutions.

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