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Management Accounting in Croatian Public Healthcare Sector: Implications of Digitalization and Development Perspectives

Abstract

The purpose of this study is to examine the level of development and implementation of management accounting (MA) practices within the public healthcare sector of the Republic of Croatia, with a particular focus on the digitalization and information technology (IT). The study seeks to contribute to a better understanding of the role of MA in improving management efficiency, cost control, and decision-making quality in public healthcare facilities. The research is based on a quantitative methodological approach using a structured questionnaire distributed to Croatian public healthcare facilities. Four components of MA were analyzed, along with the effects of IT on their efficiency. The findings indicate that traditional components of MA remain predominant in Croatian public healthcare facilities, whereas the adoption of contemporary components of MA are still limited and in the early stages of development. Planning processes represent the

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most developed MA component, while IT significantly enhances the accuracy of data, efficiency of internal reporting as well as the quality of planning processes. The main limitations of the study are the relatively small sample size and its focus solely on the Croatian public healthcare sector, which constrains the generalization of results. The originality and value of this paper lie in providing the first comprehensive empirical insight into the current state of MA practices in Croatia's public healthcare sector, emphasizing the implications of digital transformation. The research contributes to the academic and practical understanding of the interrelation between IT and MA practices and identifies key development priorities for improving efficiency in public healthcare sector.

Keywords: management accounting, public healthcare, information technology, Republic of Croatia

1. INTRODUCTION

The public health sector plays a central role in ensuring the health and well-being of the population, especially in countries with state-funded healthcare sector such as the Republic of Croatia. Healthcare expenditure and its development over time are determined by a complex interplay of demographic, social and economic factors, as well as the organizational structures and financing models of national healthcare sector. One of the most important demographic trends influencing the demand for healthcare services is the ageing of the population. As life expectancy increases, the utilization of healthcare services rises accordingly (Young, 2019). In recent years, escalating healthcare costs, growing demand for high-quality services and evolving regulatory frameworks have put significant pressure on public healthcare facilities to optimize resource allocation and improve financial management practices (OECD/European Commission, 2024). These emphasize the urgent need for a more efficient use of resources and the development of sustainable financing strategies within the Croatian healthcare sector. By pooling financial resources, reducing out-of-pocket (OOP) expenditures, and ensuring comprehensive financial protection, well-structured healthcare financing sector facilitate equal access to quality healthcare services for all population groups. However, in 2019, approximately 344 million people worldwide were pushed into or further pushed into extreme poverty due to OOP health spending. In addition, an estimated 13.5% of the global population spent more than 10% of their household budget on OOP health expenditure, indicating the significant financial burden that continues to hinder access to essential health services and threaten household financial security (World Health Statistics, 2025). These findings emphasize the urgent need to strengthen health financing mechanisms to improve financial protection, promote equitable access to healthcare and support the long-term sustainability of public health sector, especially in countries with limited health budgets such as the Republic of Croatia.

The growing need to effectively manage and control public healthcare expenditures has significantly increased the demand for the adoption of managerment accounting (MA) practices. These practices contribute to a more efficient allocation of resources, increase financial transparency and support improved governance structures within healthcare facilities (Bertoni, de Rosa and Dražić Lutilsky, 2017). MA plays a crucial role in facilitating informed decision-making and monitoring resource utilization in the provision of medical services (Kludacz-Alessandri, 2020). Its primary aim is to improve organizational performance through the application of various methods and techniques that generate relevant financial and non-financial information for management purposes. However, in the public sector, the use of economic performance measures in setting targets or evaluating outcomes is often limited. In public healthcare facilities, where the primary mission is to create social value, such as improving the health of the population, rather than to generate profits, MA practices tend to be underused. This is particularly evident as there are no market-driven incentives to calculate the economic value of the services provided (Dimitrić, Škalamera-Alilović and Vašiček, 2015). Rautiainen, Mättö, Sippola and Pellinen (2022) highlight the organizational and emotional complexity of a public basic health care setting when adopting accounting or management techniques. In contrast, private healthcare facilities typically operate in a competitive market environment that requires strict cost control and data-driven decision making, which naturally encourages a wider application of MA techniques (Kludacz-Alessandri, 2020). Nonetheless, the need for professional management and systematic application of MA remains crucial in both public and private healthcare facilities. These techniques are essential for effective operational control and strategic decision-making to ensure the sustainability and efficiency of healthcare facilities (Ambarriani, 2013). There are increasing calls to focus more on the practices and role of accounting in professional service organizations (Levay, Jönsson and Huzzard, 2020).

The MA system, as a crucial component of the management information system, is recognized as a primary source of relevant management data (Salmanzadeh, Kordestani and Kazemi, 2022). Despite existing limitations, MA is increasingly recognized as an essential support

function in public healthcare facilities. Organizations that actively integrate MA data into their planning and performance evaluation processes typically achieve more efficient use of resources and greater alignment with strategic objectives. Although public healthcare facilities are not driven by profit motives, the principles of transparency, accountability and efficiency underline the growing importance of MA in the public sector. In addition, the study investigates the impact of information technology (IT) on MA practices and employees, with particular emphasis on time management and the development of requisite professional skills. The ongoing process of digitalization holds significant potential to improve accounting practices by improving data quality, processing speed and reporting capabilities. However, it also brings notable challenges, particularly in terms of staff adaptation, skills development and system integration. In this context, policy makers and healthcare managers should prioritize investments in staff training, IT infrastructure and the development of institutional frameworks that facilitate data-driven decision making and continuous process improvement.

The aim of this study is to analyse the extent of development and application of MA in public healthcare sector of the Republic of Croatia. This study offers several important contributions:

- It focuses on the public sector, in contrast to most previous studies that focus primarily on the private sector, especially manufacturing and trade (Hassan, 2005).
- It fills a significant gap in the literature by providing empirical evidence from Republic of Croatia, where research on MA in the public healthcare sector remains limited and fragmented (Vašiček, 2013; Dimitrić et al., 2015; Dražić Lutilsky, Žmuk and Dragija, 2016; Bertoni et al., 2017; Jovanović, Dražić Lutilsky and Vašiček, 2019).
- It contributes to the growing academic interest in public sector accounting practices and the specific challenges of their application in healthcare facilities (Kludacz-Alessandri, 2017) with a particular focus on the digitalization.

The paper is divided into five chapters, including the introduction and the conclusion. The introductory section explains the role and importance of MA in the context of public healthcare facilities in the Republic of Croatia. The second section provides an overview of previous research on the various components of MA with a special focus on the healthcare sector. The third section presents the research methodology, while the research findings are presented in the fourth section. The final fifth section summarizes the main conclusions from the research study and provides recommendations for future research.

2. LITERATURE REVIEW

In today's dynamic business world, which is constantly and rapidly evolving, managers need timely, up-to-date information for effective decision-making. Internal reporting in public healthcare facilities relies heavily on the systematic and continuous collection of accurate financial and non-financial data. The quality of data collection has a direct impact on the relevance and reliability of the internal reports produced. Inadequate or delayed data collection can lead to suboptimal decision-making, misallocation of resources and missed opportunities for organizational improvement (Fuadah, Safitri, Yuliani and Arisman, 2020). The relevance of MA information is now undisputed, with cost information recognized as a strategically important resource to ensure long-term financial stability (Campos, Rodrigues and Jorge, 2017). Cost information serves as a critical basis for decision making in terms of resource allocation and evaluation of effectiveness at both system-wide and organizational levels, supporting providers, purchasers and regulators around the world (Chapman, Kern, Laguecir and Quentin, 2016). According to Dražić Lutilsky et al. (2016) accountants and financial officers from Croatian public hospitals believe that with the accrual accounting basis they would obtain reliable, timely and accurate information about costs, which would result in better governance in public hospitals. One of the main benefits of IT is data integration, as both internal and external data is stored in a centralized database, which greatly simplifies and speeds up data collection

and processing. Research by Pervan and Dropulić (2019) confirms the expected positive impact of effective IT implementation on the accuracy, timeliness and completeness of information. Therefore, a similar impact of IT on data collection as a component of MA is expected in public healthcare facilities in the Republic of Croatia. In many healthcare facilities, MA and cost accounting is still predominantly focused on external reporting and planning of operational costs (Macuda, Baran and Kludacz-Alessandri, 2016). Research in public hospitals in both Croatia and Italy has confirmed that internal reports are primarily prepared to fulfil management requirements and are mainly used to support decision-making (Bertoni et al., 2017). IT is expected to facilitate changes in internal reporting by enabling the automation of routine reports, thereby reducing the time required to produce them and enabling the creation of additional reports to support management decision-making (Pervan and Dropulić, 2019).

The business plan holds a central role in public sector management, as it pertains to a specific management period and represents a structured set of projected revenues and expenditures across various budget items (Campos et al., 2017). Research conducted in Polish public healthcare facilities indicated frequent use of management and cost accounting information in the planning process and the development of business plans (Macuda et al., 2016). A study conducted within the Czech Republic's healthcare sector found that MA practices are well-established and relatively conventional, with planning identified as the most relevant MA practice for public healthcare facilities (Krupička, 2020). A study conducted by Kurisu, Shima and Yasukata (2022) on public and private hospitals in Japan found that accounting information is not used effectively for cost management and the overall management of healthcare facilities, despite a high level of utilization of accounting information for budgeting and business planning purposes. Managers and governing bodies of public healthcare facilities perceive the business plan as a highly valuable tool, both in terms of its function within the organization and the anticipated outcomes resulting from its application (Macuda et al., 2016). Budget constraints faced by administrations require prioritizing the investment or expenditure of available resources. In short, all health services that lack management efficiency must change their operational methods. They need to revise their resource management policies to achieve better outcomes with the same or a reduced budget (Campos-Lucena, Ruiz-Gándara, Perez-Nimo, Ortega-Irizo, and Velasco-Morente, 2022). It is assumed that IT will influence both, the preparation and control of business plans by management, primarily by reducing the time required for their preparation and enhancing their quality, as well as overall satisfaction with the planning process.

Over the coming years, healthcare sector worldwide will face a range of financial challenges, including economic pressures, healthcare reforms, and rising demand for services. Effectively addressing these challenges will require, at a minimum, a comprehensive understanding of the costs associated with care delivery. Furthermore, healthcare facilities must develop the capability to actively manage their costs, rather than merely measure or monitor them (Young, 2019). Innovative management and cost accounting methods contribute to achieving a balance between cost efficiency and quality of care, and they are of critical importance for healthcare facilities in attaining both clinical and financial outcomes (Alobaidy, 2024). One of the few studies addressing the application of contemporary MA techniques in the public sector in the Republic of Croatia (Dimitrić et al., 2015) emphasized the link between accounting competencies within public management and the success of cost and MA practices. Specifically, the knowledge and application of contemporary MA techniques significantly influence the effectiveness of cost and MA in Croatia's public sector. Findings from Krupička's (2020) study suggest the use of various cost accounting practices and highlight their importance in business decision-making. In many healthcare facilities, healthcare professionals themselves may pose barriers to the development or implementation of contemporary MA techniques, since their decision-making processes typically do not consider efficiency or economic reasoning (Padovani, Orelli and Young, 2013). According to Vărzaru (2022) criticism of the declining relevance of traditional Cost Accounting Techniques (CAT)

has led to the development of new approaches in cost accounting, including Activity-Based Costing (ABC), Target Costing (TC), Life-Cycle Costing (LCC), and Kaizen Costing (KC). Among these, the ABC methodology is increasingly adopted in the healthcare sector. However, many healthcare professionals using ABC do not fully understand the specific challenges the method aims to solve (Young, 2019). Despite the growing use of these new techniques and methods, traditional MA techniques continue to be widely utilized.

Digital transformation permeates all aspects of business operations, with accounting and MA being no exception. Previous research highlights that the adoption and application of MA methods and techniques in the public sector, including public healthcare in the Republic of Croatia, remain limited and exhibit significant shortcomings, particularly regarding the quality of information used for cost management and efficiency assessment (Jovanović et al., 2019; Vašiček, 2013). Ambarriani (2013) found that finance and accounting managers in healthcare facilities often lack sufficient competencies in MA, which confines their roles predominantly to budget preparation and financial reporting, rather than providing strategic decision support. Accounting systems in healthcare facilities are expected to achieve critical objectives, such as improving cost efficiency without compromising service quality, optimizing resource utilization through service line management, and promoting continuous organizational improvement (Hammad, Jusoh and Yen Nee Oon, 2010; Fuadah et al., 2020). In this dynamic environment, the role of accountants is shifting from an operational to a strategic function, from data recorders to advisors who provide management with analytical support for informed decision-making. Given this evolving role (Pervan and Dropulić, 2019), there is a pressing need to strengthen MA competencies. The level of education and management skills significantly influence the effective application of MA practices in healthcare (Kludacz-Alessandri, 2020), with formal education playing a crucial role in supporting the development of accounting and financial managers' competencies (Ambarriani, 2013). To remain relevant, accounting professionals must actively develop not only their digital competencies but also their ability to interpret and strategically apply financial data. Furthermore, modern IT environments require accounting and finance professionals involved in internal reporting to continuously upgrade their skills in IT, business processes, and communication (Pervan and Dropulić, 2019). Healthcare facilities require CEOs capable of managing current challenges and future shifts in healthcare delivery. Research can clarify essential leadership strategies and inform the redesign of CEO training programs (Lega, Rotolo, and Sartirana, 2022). Management accountants and other financial managers require a deeper understanding of the nature of decision-making in the public sector and the appropriate role of MA within this context. Additionally, the role of management accountants is expected to undergo significant changes in the near future, particularly due to technological advancements, including the development of artificial intelligence (Prowle, 2021).

3. RESEARCH METHODOLOGY

3.1. Model Design and Research Hypotheses

The aim of this research is to investigate the level of development and application of MA in the public healthcare sector of the Republic of Croatia. This study examines four key components of MA within public healthcare facilities: (1) data collection for internal reporting, (2) internal management reporting, (3) planning and control processes, and (4) the application of contemporary MA techniques. Additionally, the study explores the impact of IT on MA practices across three critical areas: (1) IT improves *data collection* in management accounting by increasing accuracy and timeliness through integrated information systems (Pervan and Dropulić, 2019); (2) IT enhances *internal reporting* by providing managers with timely, reliable, and relevant information, thereby improving the efficiency of managerial reporting and decision support (Papiorek and Hiebl, 2024), and (3) IT strengthens *planning processes* by supporting budgeting, reducing budget slack and improving information flows and managerial collaboration (Shu, Chen and Chen, 2023). Special attention

was also given to the influence of IT on employees.

Based on the research aim, the following hypotheses have been formulated:

- H1: There is a statistically significant difference between the application of traditional and contemporary components of MA within public healthcare facilities.
- H2: There is a statistically significant difference in the application of MA depending on the organizational unit in which internal reporting is conducted.
- H3: There is no statistically significant difference in the application of MA according to the type or size of public healthcare facilities.
- H4: There is a statistically significant difference in the application of traditional components of MA within public healthcare facilities.
- H5: The application of IT influences the nature of tasks and required competencies of employees involved in internal reporting within public healthcare facilities.
- H6: The application of IT improves the accuracy of data collection, the efficiency of internal reporting, and the quality of planning processes.

3.2. Description of the Research Sample

This study employs a quantitative research design based on the collection and analysis of primary data through a structured survey. The survey questionnaire was developed and distributed in May 2025. The link to the online questionnaire was sent to the Accounting and Finance Departments of public healthcare facilities. The target respondents were managers, heads of accounting, financial, or controlling departments, and other personnel directly involved in MA processes. This group was specifically chosen as they possess the necessary expertise and the most comprehensive insight into the implementation of MA practices within their facilities. The survey was distributed via email to 102 public healthcare facilities across Croatia, including 62 hospitals and 40 health centers. A total of 37 fully completed and valid responses were collected, resulting in a response rate of 36.27% (43.55% for hospitals and 25% for health centers). This sample provides a relevant basis for evaluating the current state of MA practices within the Croatian public healthcare sector.

The analysis of the collected data reveals that 29.73% of the respondents hold the position of Head of Financial Operations, 27.03% are employed as Assistant Director for Financial Operations, and 21.62% occupy the role of Head of Accounting. Additionally, 40.54% of the participants have been in their current positions for less than five years, while 59.46% have held their positions for more than five years. Internal reporting for management purposes is predominantly carried out within the accounting department, as indicated by 40.54% of the respondents. Given the satisfactory response rate and the professional qualifications of the participants, it can be concluded that the research sample is sufficiently representative for assessing the application of MA practices in public healthcare facilities in the Republic of Croatia.

3.3. Description of Research Variables

The analysis of the application of MA practices in public healthcare facilities was conducted across four components: (1) data collection for internal reporting, (2) internal management reporting, (3) planning and control processes, and (4) the application of contemporary MA techniques. For each observed component, a series of statements was provided, which the respondents evaluated using a five-point Likert scale. The survey instrument was pre-tested with one public healthcare facility to ensure clarity and relevance. All four components of MA demonstrated Cronbach's alpha coefficients greater than 0.7, indicating high reliability for each of the investigated components. The number of items, i.e., statements, for each MA component, as well as the reliability measures, are presented in Table 1.

The impact of IT on MA practices is examined through three areas: (1) the accuracy, scope, and

Table 1. Components of MA

Components of MA	Number of items	Cronbach's Alpha
1) data collection for internal reporting	4	0.715
2) internal management reporting	6	0.818
3) planning and control processes	6	0.752
4) application of contemporary MA techniques	5	0.931

Source: Author's presentation based on the research

Table 2. The Impact of IT on MA Practices and Employees

The impact of IT on:	Number of items	Cronbach's Alpha
1) data collection	3	0.901
2) internal reporting	3	0.922
3) planning processes	3	0.947
4) employees involved in internal reporting	7	0.890

Source: Author's presentation based on the research

timeliness of data collection, (2) the frequency, speed, and depth of internal reporting, and (3) the quality and efficiency of business planning processes. Additionally, the influence of IT on employees involved in internal reporting is addressed, as presented in Table 2. All four examined aspects of the impact of IT on MA practices and employees involved in internal reporting demonstrated Cronbach's alpha coefficients exceeding 0.7, indicating high reliability for each aspects assessed.

4. RESEARCH RESULTS

The first hypothesis (H1) assumes that there is a statistically significant difference between the use of traditional and contemporary components of MA in public healthcare facilities. Traditional MA include data collection for internal reporting, internal management reporting, and planning and control processes, whereas contemporary MA encompass Activity-Based Costing, Target Costing, Balanced Scorecard, Benchmarking, and Key Performance Indicators.

Based on the mean differences, with a p-value of less than 1%, it can be concluded that there is a statistically significant difference in the extent of application between traditional and contemporary components of MA in public healthcare facilities. This conclusion is further supported by the results of the t-test conducted for each MA component. The application of traditional MA significantly prevails over the application of contemporary MA in public healthcare facilities (Table 3). Although new MA techniques and methods are increasingly being adopted, traditional MA practices remain deeply rooted and widely applied in facilities. This continued reliance on conventional approaches reflects their proven reliability, ease of implementation, and familiarity among managers, who often combine them with modern tools to achieve a balanced and effective decision-making process.

Table 3. Differences between the Use of Traditional and Contemporary Components of MA

		Traditional MA	Contemporary MA
Differences	Mean	3.7686	2.2486
	SD	.57071	1.07125
Mean Differences (p-value)		-1,51993 (<.001)	

Note: * t-test (contemporary MA) = 4.251 (<.001); n = 37; test value = 1.5. ** t-test (traditional MA) = -12.784 (<.001); n = 37; test value = 4.5
Source: Author's presentation based on the research

Table 4. Differences in the Use of MA Depending on the Organizational Unit

Panel A: Ranks			
Organizational Unit	N	Mean Rank	Sum of Ranks
Management and Controlling	4	8.88	35.50
Accounting and Finance	33	20.23	667.50
Total	37		
Panel B: Mann Whitney U test			
Mann-Whitney U		25.500	
Wilcoxon W		35.500	
Z		-1.984	
Asymp. Sig. (2-tailed)		.047	

Note: * Mann W-U test (contemporary) = 36 (p-value = 0.140); Mean Rank Management and Controlling = 11.50; Mean Rank Accounting and Finance = 19.91. ** Mann W-U test (traditional) = 30.5 (p-value = 0.082); Mean Rank Management and Controlling = 10.13; Mean Rank Accounting and Finance = 20.08.
Source: Author's presentation based on the research

The utilization of MA differs significantly depending on the organizational unit responsible for internal reporting (H2). Specifically, this responsibility is assigned to either the Management and Controlling department or the Accounting and Finance department, reflecting potential variations in management focus and the use of accounting information within the organization.

The Accounting and Finance unit has a higher mean rank (20.23) compared to the Management and Controlling unit (8.88). Based on the Mann-Whitney U test, it can be concluded that there is a statistically significant difference in the use of MA depending on the organizational unit in which internal reporting is conducted (p-value < 5%). The same conclusions, whereby the Accounting and Finance unit exhibits higher mean ranks, can also be drawn when differences in the use of traditional and contemporary components of MA are considered separately (Table 4).

The adoption and implementation of MA appear relatively consistent across public healthcare fa-

Table 5. Difference in the Application of MA Depending on the Type of Public Healthcare Facility

Panel A: Ranks			
Type of public healthcare facility	N	Mean Rank	Sum of Ranks
Hospital	27	19.67	531.00
Health Center	10	17.20	172.00
Total	37		
Panel B: Mann Whitney U test			
Mann-Whitney U		117.00	
Wilcoxon W		172.00	
Z		-.616	
Asymp. Sig. (2-tailed)		.538	

Note: * Mann W-U test (contemporary) = 95.50 (p-value = 0.174); Mean Rank Hospitals = 20.46; Mean Rank Health Centers = 15.05. ** Mann W-U test (traditional) = 127.00 (p-value = 0.784); Mean Rank Hospitals = 19.30; Mean Rank Health Centers = 18.20.
Source: Author's presentation based on the research

Table 6. Difference in the Application of MA Depending on the Size of Public Healthcare Facility

Panel A: Ranks			
Number of employees	N	Mean Rank	Sum of Ranks
1 – 500 employees	19	18.24	346.50
> 500 employees	18	19.81	356.50
Total	37		
Panel B: Mann Whitney U test			
Mann-Whitney U		156.50	
Wilcoxon W		346.50	
Z		-.441	
Asymp. Sig. (2-tailed)		.659	

Note: * Mann W-U test (contemporary) = 138.50 (p-value = 0.320); Mean Rank 1-500 employees = 17.29; Mean Rank > 500 employees = 20.81. ** Mann W-U test (traditional) = 169.00 (p-value = 0.951); Mean Rank 1-500 employees = 18.89; Mean Rank > 500 employees = 19.11.
Source: Author's presentation based on the research

Table 7. Differences in the Use of Traditional Components of MA within Public Healthcare Facilities

Panel A		Data collection	Internal reporting
Differences	Mean	3.6284	3.7027
	SD	.69627	.63724
Mean Differences (p-value)		.07432 (.300)	
Panel B		Data collection	Planning processes
Differences	Mean	3.6284	3.9279
	SD	.69627	.58865
Mean Differences (p-value)		-.29955 (.003)	
Panel C		Internal reporting	Planning processes
Differences	Mean	3.7027	3.9279
	SD	.63724	.58865
Mean Differences (p-value)		-.22523 (.005)	

Source: Author's presentation based on the research

cilities, regardless of their size or type, leading to the assumption that the application of MA does not differ significantly based on the type or size of public healthcare facilities (H3). In this study, public healthcare facilities were categorized as Hospital (n = 27) or Health Center (n = 10).

Although hospitals exhibit higher mean ranks in the application of MA (19.67) compared to health centers (17.20), the Mann-Whitney U test indicates that this difference is not statistically significant (Table 5). Similar conclusions are observed when analysing the use of traditional and contemporary components of MA separately, with hospitals consistently showing higher mean ranks, yet without statistical significance.

In this study, the number of employees measured the size of public healthcare facilities, with 51% of facilities employing fewer than 500 staff. Although public healthcare facilities with more than 500 employees exhibit higher mean ranks in the application of MA (19.81) compared to those with fewer than 500 employees (17.20), the Mann-Whitney U test indicates that this difference is not statistically significant (Table 6). Similar conclusions apply when examining traditional and contemporary components of MA separately, with larger organizations consistently showing higher mean ranks, though without statistical significance. This indicates that MA practices remain relatively stable across public healthcare facilities, regardless of their size or type, underscoring the standardized role of MA in public healthcare management.

In this study, three key traditional components of MA were examined: data collection for internal reporting, internal management reporting, and planning and control processes. Based on these components, it is hypothesized (H4) that there are statistically significant differences in the use of traditional components of MA across public healthcare facilities, reflecting variations in management practices and organizational priorities.

A comparison of the means indicates that the use of traditional components of MA in healthcare facilities is most pronounced in planning processes (mean = 3.9279), followed by internal reporting (mean = 3.7027), and least pronounced in data collection (mean = 3.6284). Mean comparison tests reveal statistically

Table 8. The Impact of IT on Employees Involved in Internal Reporting

	t	df	Significance		Mean Difference	95% Confidence Interval of the Difference	
			One-Sided p	Two-Sided p		Lower	Upper
The impact of IT on employees	-10.439	36	<.001	<.001	-1.49228	-1.7822	-1.2023

*Mean = 3.0077 (SD = 0.86958); N = 37; test value = 4.5.

Source: Author's presentation based on the research

significant differences in the use of traditional components of MA between planning processes and data collection ($p < 0.01$), as well as between internal reporting and planning processes ($p < 0.01$). However, no statistically significant difference is observed between internal reporting and data collection within public healthcare facilities (Table 7). In conclusion, the planning processes constitute a central management tool in the public healthcare sector, facilitating efficient planning, monitoring, and resource allocation. Its implementation strengthens management processes, promotes accountability, and ensures the effective utilization of budgetary funds, while the integration of information technology further enhances the quality, efficiency, and precision of planning.

IT plays an integral role in MA practices on a daily basis, regardless of whether contemporary or traditional components of MA are employed. The fifth hypothesis (H5) assumes that the application of IT changes employees' work activities and skill requirements, shifting their focus from routine data processing to analytical and advisory functions within internal reporting in public healthcare facilities.

Considering the impact of IT on employees engaged in internal reporting within public healthcare facilities, the results of the t-test (Table 8) indicate that this impact is statistically significant ($p < 0.01$). Consequently, accounting professionals must continuously enhance their digital competencies as well as their ability to interpret and strategically apply financial data. Furthermore, the demands of modern IT environments require those responsible for internal reporting to consistently develop skills in IT, business processes, and effective communication.

The impact of IT on MA is examined across three areas: (1) the accuracy, scope, and timeliness of data collection; (2) the frequency, speed, and depth of internal reporting; and (3) the quality and efficiency of business planning processes. Based on these aspects, it is hypothesized (H6) that the application of IT enhances the accuracy of data collection, the efficiency of internal reporting, and the overall quality of planning processes. Analysis of the results indicates that the influence of IT is most pronounced in data collection (mean = 3.7072), followed by internal reporting (mean = 3.4595), and planning processes (mean = 3.3784), highlighting its critical role in supporting traditional components of MA in healthcare facilities.

Given the statistically significant correlations observed among the traditional components of management accounting (data collection, internal reporting, and planning processes), it can be concluded that information technology (IT) is positively associated with the accuracy of data collection, the efficiency of internal reporting, and the overall quality of planning processes (Table 9).

5. CONCLUSION

The findings of this study provide important insights into the current state, development, and application of MA practices in the public health-

Table 9. Correlation between Traditional Components of MA in Public Healthcare Facilities

			Data collection	Internal reporting	Planning processes
Spearman's rho	Data collection	Correlation Coefficient	1.000	.582**	.349*
		Sig. (2-tailed)	.	<.001	.034
		N	37	37	37
	Internal reporting	Correlation Coefficient	.582**	1.000	.727**
		Sig. (2-tailed)	<.001	.	<.001
		N	37	37	37
	Planning processes	Correlation Coefficient	.349*	.727**	1.000
		Sig. (2-tailed)	.034	<.001	.
		N	37	37	37

Note: *Spearman correlation is significant at the 0.05 level (2-tailed); **at the 0.01 level (2-tailed). ***Mean (SD) data collection = 3.7072 (.91552); internal reporting = 3.4595 (.99490); planning processes = 3.3784 (1.07486).
Source: Author's presentation based on the research

care sector of the Republic of Croatia. The results indicate that traditional components of MA continue to dominate within public healthcare facilities, while the implementation of contemporary components of MA remains limited and in the early stages of adoption. This confirms the first hypothesis and highlights the persistence of conventional accounting approaches in the public sector, primarily driven by regulatory requirements and institutional inertia. The analysis further reveals statistically significant differences in the use of MA depending on the organizational unit in which internal reporting is conducted, thereby supporting the second hypothesis. Accounting and Finance departments display a higher level of engagement in MA practices compared to Management and Controlling units, suggesting the need for stronger integration between financial and management reporting functions. The third hypothesis is also confirmed, as no statistically significant differences were identified in the application of MA with respect to the type or size of public healthcare facility. This finding suggests a relatively homogeneous approach to MA across public healthcare facilities, regardless of institutional characteristics. However, this conclusion should be interpreted with caution given the relatively small sample size (N = 37), which may have limited the statistical power to detect potentially meaningful differences. Accordingly, these findings should be regarded as preliminary and should be validated in future research based on larger and more diverse samples. The fourth hypothesis is partially confirmed, revealing statistically significant differences in the application of traditional components of MA between planning processes and other key processes, such as internal reporting and data collection. Planning processes remains the most extensively applied traditional accounting activity, underscoring the financial control orientation prevalent in Croatian public healthcare facilities. Regarding the fifth hypothesis, the study confirms that IT has a noticeable impact on work processes, highlighting the need for continuous skill development among employees responsible for internal reporting. Finally, the sixth hypothesis

is confirmed, indicating that the use of IT has enhances the accuracy of data collection, the efficiency of internal reporting, and the overall quality of planning processes.

This study has certain limitations that should be acknowledged. The sample size is relatively small and restricted to public healthcare facilities within the Republic of Croatia, which may limit the generalizability of the findings to other contexts or healthcare sector. Future research should expand the scope of this study by including a larger sample and comparative analysis with other public sectors or healthcare sector in the EU, which would provide a broader understanding of MA development in the context of digital transformation and public sector reform. Additionally, the study relies on self-reported data, which introduces the potential for response bias, as participants may have provided socially desirable or subjective answers. Furthermore, the cross-sectional design of the research does not enable the assessment of changes or long-term impacts over time. Despite these limitations, the study offers valuable empirical insights into the current practices and development trends of MA in the Croatian public healthcare sector, contributing to a relatively underexplored research area. Overall, the study demonstrates that MA in Croatia's public healthcare sector is evolving gradually, with growing awareness of the importance of digitalization and data-driven management. However, the results also point to several limitations, including the insufficient adoption of contemporary MA practices and underutilization of IT potential. Strengthening MA competencies, promoting digital literacy, and integrating advanced IT systems are essential steps toward enhancing efficiency, transparency, and informed decision-making in public healthcare management.

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Menadžersko računovodstvo u javnom zdravstvenom sektoru Republike Hrvatske: implikacije digitalizacije i perspektiva razvoja

Sažetak

Svrha ovog istraživanja jest ispitati razinu razvoja i primjene praksi menadžerskog računovodstva (MR) u javnom zdravstvenom sektoru Republike Hrvatske, s posebnim naglaskom na digitalizaciju i primjenu informacijskih tehnologija (IT). Cilj istraživanja je doprinijeti boljem razumijevanju uloge MR u unapređenju učinkovitosti upravljanja, kontrole troškova i kvalitete procesa donošenja odluka u javnim zdravstvenim ustanovama. Istraživanje se temelji na kvantitativnom metodološkom pristupu, pri čemu je korišten anketni upitnik distribuiran javnim zdravstvenim ustanovama u Republici Hrvatskoj. Analizirane su četiri komponente MR, uz ispitivanje utjecaja IT na njihovu učinkovitost. Rezultati pokazuju da tradicionalne komponente MR i dalje prevladavaju u hrvatskim javnim zdravstvenim ustanovama, dok je primjena suvremenih komponenti MR ograničena i nalazi se u ranoj fazi razvoja. Proces planiranja identificiran je kao najrazvijenija komponenta MR, dok IT značajno poboljšava točnost podataka, efikasnost internog izvještavanja kao i kvalitetu procesa planiranja. Glavna ograničenja istraživanja odnose se na relativno mali uzorak i fokus isključivo na hrvatski javni zdravstveni sektor, što ograničava mogućnost generalizacije rezultata. Originalnost i vrijednost rada očituju se u pružanju prvog sveobuhvatnog empirijskog uvida u stanje i razvoj praksi MA u hrvatskom javnom zdravstvenom sektoru, s naglaskom na implikacije digitalne transformacije. Istraživanje doprinosi znanstvenom i praktičnom razumijevanju povezanosti IT i MR te identificira ključna razvojna područja za povećanje učinkovitosti u javnom zdravstvenom sektoru.

Ključne riječi: menadžersko računovodstvo, javno zdravstvo, informacijske tehnologije, Republika Hrvatska