

INFORMATION USE PREFERENCES OF ACCOUNTING STAKEHOLDERS: EXPERIENCES FROM THE HUNGARIAN LOCAL GOVERNMENT SUBSYSTEM*

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The purpose of this paper is to examine the complex issue of the use of accounting information (AI). The research aims to identify the different stakeholder groups and their information needs within the context of the Hungarian local government subsystem. In our research, we differentiated junior accountants, senior accountants, and policymakers, who have different roles and experiences in regard to the accounting information system. The observation was carried out with a questionnaire which was retrieved by 216 respondents.

Senior accountants typically rate accrual accounting data higher in their decision making and generally rate the usefulness of cash accounting lower. Meanwhile junior accountants are typically data preparers, so for them accounting is more of an administrative role. For policymakers, the information was less relevant, which may be because they have to take non-accounting information into account in their decisions. The paper emphasizes the importance of paying more attention to the usage of AI in the public sector and highlights the necessity of understanding the needs of the stakeholders. The study sheds light on the information use habits of the stakeholders of the Hungarian local government subsystem, which provides a new perspective on the 2014 public sector accounting reform.

Keywords: Accounting Information, Financial Information, Public Sector Accounting

1. Introduction

The impact of reforms and the experiences of individual stakeholders have varied considerably. Since the 1970s, there has been a growing demand for public sector reforms (Christensen et al. 2018), and over the last two decades, financial and management control systems that focus on the public and on output have gained increasing importance (Hoque 2021). Due to these changes, the accounting of the public sector has to be modified following the changing needs.

The introduction of accrual accounting has been a popular reform worldwide (van der Hoek, 2005; Pina et al. 2009; Buhr 2012; PWC 2015; PwC 2018), however, the effects are quite diverse (Paulsson, 2006; Nasi & Steccolini 2008; Hyndman & Conolly

* DOI 10.21868/PGnG.2024.2.2.

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2011; Ahmad 2016); the impact of accounting information (AI) on management cannot be clearly assessed (Arnaboldi & Lapsley 2009), and several studies have identified the marginal role of accrual accounting data (Christianens & Rommel 2008; Paulsson, 2006). This was not different in the case of the Hungarian state accounting reform, where some benefits have been realized, but unexploited potentials can also be identified (Molnár & Hegedűs 2017; Tóth 2020; Lentner et al. 2020).

The Hungarian public sector accounting system was reformed in 2014, when accrual accounting was introduced in addition to the modified cash approach used previously. This has brought a significant change in the way the accounting system works and the data they produce. The data collection took place seven years after the introduction of accrual accounting, which allowed sufficient time for stakeholders to become familiar with the accounting system. Besides the reform of the public sector accounting system, the operation of the public sector become more centralized, which supports the controlling of the debt and public duties of the sector (Lentner & Hegedűs 2021), preceded by excessive indebtedness of local governments (Lentner et al. 2018).

Our study presents the impact of the Hungarian state accounting reform on local government management and explores the differences between the experiences of accounting professionals and stakeholders in other organizations. The study's approach is also intended to fill a gap in the literature, as it is not typical to consider the experiences of different stakeholders in parallel.

The paper describes the expected effects of the introduction of accrual accounting, presents the main features of the Hungarian accounting system, and discusses the information needs of different stakeholders. The experience of the Hungarian local government subsystem is then presented, and the paper concludes with the conclusions. In our research, we distinguished three groups: policymakers as users of accounting information, junior accountants as producers of data, and senior accountants, who form a transitional group between the other two groups. The members of the three groups may attach different importance to certain accounting data.

As the literature reviewed highlights (Jorge et al. 2019; van Helden & Reichard 2019; Ouda & Klischewski 2019), each stakeholder group has different information needs and information use patterns. In our research, we seek to answer the following questions:

Research question 1: Which data source is of greater importance to stakeholders?

Research question 2: Which groups find accounting information most useful?

Research question 3: Which group members value financial accounting information more?

2. Brief literature review

The section looks at the expected effects of accrual accounting and how they fit in with other processes in the budget. It also describes the main features of the Hungarian public accounting system, and the information needs of different stakeholder groups.

2.1. What effects could the introduction of accrual accounting have?

Accrual accounting is a generally accepted information system that provides a complete and reliable picture of an organization's financial and economic position and performance. It takes into account the full range of assets and liabilities. In contrast to the cash approach, it captures the creation of economic value rather than cash flows, and therefore, provides a more accurate picture of processes (Arnaboldi & Lapsley 2009; European Commission 2013; Tajudin et al. 2022).

The advantages and limitations of accrual accounting and the potential impacts of its introduction have been discussed in literature (Guthrie 1998; Sevic 2004; Barton 2009; Lapsley 2009; García 2014; Prabowo et al. 2017). As they capture a wider range of events, accrual accounting systems provide financial information in a more timely manner (Guthrie 1998) and limit the potential for bias (Pályi 2015). They also allow for more accurate monitoring of resources used, a more complete assessment of costs, and an evaluation of performance (Robinson 1998; Ouda 2003; Lapsley et al. 2009; Prabowo et al. 2017), and accruals provide insight into economic events over several years (Christensen et al. 2018). The introduction of accrual accounting supports long-term decision-making and the evaluation of individual decisions, thereby contributing to the assessment of efficiency and effectiveness and enhancing accountability (Tickell 2010; Ezzamel et al. 2014; García 2014). In line with this, accounting systems of this type can better support decision-making (Hyndman & McKillpop 2019). This also leads to a higher degree of transparency, which supports the controlling activities (Ilie & Miose 2012), the monitoring of the implementation of the budget and compliance with the budgetary rules (Nasi & Steccolini 2008). The higher level of accountability could increase public confidence in the financial management of the government (Shariman et al. 2017).

Within the cash approach, amortization and hence the need for asset replacement does not occur, and effective management of assets is not supported (Barton 2009; Simon 2009, 2010). The advantages of the accrual accounting approach allow going beyond the simplification of the cash-based concept so that the cost of each activity is equal to the value of the amount of money spent on the activity (van der Hoek 2005). In the cash-based approach, the presentation of the value of the resources used gives the illusion that the tasks have been completed, regardless of the results actually achieved (Simon 2009).

In our opinion, accrual accounting can be seen as a method that can meet the expectations of modern information systems and support the functioning of the state in a way that meets public expectations and the interests of the public.

2.2. Budget planning and accounting information system

In addition to the choice of the basis for the accounting system, an important issue is the method of budgeting. In Van der Hoek's (2005) approach, budgets are future-oriented plans for the use of resources between alternatives. Given that accountability is based on budget execution (Vértesy 2020), the consistency of the budget logic and the accounting information system is of great importance.

If the approach to public budgeting and accounting is different, data from the accounting information system cannot be used directly (Simon 2009; Bathó 2012). Although accrual accounting is gaining popularity, we find that accrual-based budgeting is less popular (van der Hoek 2005; Adhikari & Garseth-Nesbakk 2016). In cases where only the accounting system becomes accrual and the budget remains cash-based, the renewal of the accounting system is seen by different stakeholders as merely an accounting exercise (Carlin 2005; Vértesy 2020), and the use of the data remains limited.

The legislation divides general government accounting into budgetary accounting (BA) and financial accounting (FA). The BA records the appropriations, commitments, and cash outturns, while the FA provides a continuous, close-ended record of the assets and results of operations. As a consequence, a single economic event usually needs to be recorded in both the BA and the FA, which is in effect double-entry bookkeeping (Table 1). BA is similar to the modified cash accounting previously used throughout the general government before 2014, while FA uses the concepts and tools that exist in business accounting (Osgyáni 2015). While BA aims to continuously monitor budget planning and implementation, underpinning discharge, FA aims to measure national wealth and to assess the effectiveness and performance of the government organization (Lentner 2019). The characteristics of the Hungarian public sector accounting system and the relationship between accounting and reporting are illustrated in *Table 1* below.

Table 1. Structure of the Hungarian public sector accounting

	BUDGETARY ACCOUNTING (BA)	FINANCIAL ACCOUNTING (FA)
Accounting	cash	accrual
Book-keeping	<ul style="list-style-type: none"> • revenue and expenditure appropriations • accounts receivables • commitments and payment obligations • compliances • the reality of the use made of funds received from the central budget • continuous, close-ended register • ensure the preparation of the relevant parts of the accounts 	<ul style="list-style-type: none"> • the assets and their composition • the result of the activity • continuous, close-ended register • ensure the preparation of the relevant parts of the accounts
Reporting	<ul style="list-style-type: none"> • budget report • report of budget balance • data on staff benefits and the composition of employees and elected officials • information on the planned amounts and implementation of certain benefits and allowances paid from social security funds • accounts relating to the specific management of the local government subsystem 	<ul style="list-style-type: none"> • balance sheet • income statement • explanatory notes

Source: author's compilation based on the Government Decree No. 4/2013. (I. 11.) on the Accounting of Public Finances

The introduction of the new accounting system did not affect the budgeting practices of general government organizations, the structure and the logic of the budget remained the same as the previous modified cash approach. Although accrual accounting was introduced in the accounting system, the cash approach to budget management was retained.

Accounting reforms can only be considered truly effective if the information provided by the system is actually the basis for management decisions (Simon et al. 2018.). In terms of the use of information, one can look at the supply side that creates the information and the demand side that uses the information (van Helden & Reichard, 2019). The supply side needs to create information that is relevant, usable, and understandable for the user side, essentially a coordinated development of both sides is needed (Ouda & Klischewski 2019). The AI can support the decision-making only if it is relevant for the users, accurately refers to the real situation and reaches the user in time (Anggraeni & Winarningish 2021).

Decisions about the course of non-AI are significant (Brorström 1998; Prowle 2021), or the AI is not even considered usable by stakeholders (van Helden & Reichard, 2019). Another observation is that cash-based data is considered more important among AI (Pollanen & Loiseau-Lapointe 2012). However, the study by Kuroki and Motokawa (2022) is an example of the opposite experience, where both non-financial and accrual-based cost information was confirmed to be used by Japanese local government decision-makers.

2.3. Identification of the stakeholder groups and their information needs

In the private sector, the scope of AI has been adapted to the changing needs of stakeholders (Sevic, 2004), and reforms in the public sector may be driven by similar reasons (Pina et al., 2009; Christensen et al., 2018). One of the objectives of these reforms is to meet the information needs of stakeholders, so the effects of such a reform should be examined from their perspective. Several studies have attempted to identify the stakeholders of the accounting system and the needs of each group (Jorge et al., 2019; Ouda & Klischevski 2019).

One of the most important users of information consists of policy makers. Local politicians have to make trade-offs between different interests when making decisions, so non-financial and verbal information is important (Sinervo & Haapla 2019), and the range of data that is important for politicians is difficult to define (Jorge et al. 2019). AI can legitimize decisions (van Helden & Reichard 2019), but, as a consequence, their use is often only symbolic (Ouda & Klischewski 2019). The use of AI is also constrained by the lack of accounting knowledge and the information overload of policymakers (Jorge et al. 2019; van Helden & Reichard 2019).

The state, in the absence of owners, is primarily accountable to the public (Oulasvirta 2014), but such a relationship is not observed in the private sector. In the case of companies, information needs are mainly determined by the owners (Barton 2005), but the relationship between the state and taxpayers is more indirect. Moreover, the possibility of citizens to intervene and assert their interests is much more indirect and weaker than in the case of owners of companies (Oulasvirta 2014). Furthermore,

citizens are not primarily interested in financial information, but rather in the quality of certain public services (Lombrano & Zanin 2013). Additionally, civilians typically lack the background knowledge to interpret AI, although this could be improved by specific, simplified reports (Cohen et al. 2021). Since such practices are not common in Hungary, it would be pointless to include the public in the study, as is it highlighted by the low level of financial literacy in Hungary (Ország et al. 2015; Kovács et al. 2021).

In line with the above, we have distinguished “Junior accountants”, “Senior accountants” and “Policymakers” groups in our research. Their main characteristics and their relationship with government accounting are concluded in *Table 2*.

Table 2. Stakeholder groups and their information needs

Stakeholder group	Junior accountants	Senior accountants	Policymakers
Relation to accounting data	producer	producer and user	user
Role in local governments	administrative processes	preparation of decisions	(political) decision-making
Usage of accounting data	<ul style="list-style-type: none"> - completing bookkeeping tasks - recording of commitments and payment obligations - creating budget reports 	<ul style="list-style-type: none"> - completing bookkeeping tasks - support of decision making, budgetary planning - creating budget reports 	<ul style="list-style-type: none"> - control the sound operation of the local government - control the implementation the budget - decision making
Expected preference of accounting data	budgetary accounting is preferred	budgetary accounting and financial accounting are equally preferred	budgetary accounting is preferred

Source: author’s compilation

3. Research methodology

The questionnaire was divided into three major blocks (*Appendix 1*): the first block is designed to assess opinions on the timeliness, reliability, and transparency of the public accounting information system, i.e., whether the users of the system experience the benefits that the literature suggests they should expect. The second unit focused on the use and usefulness of AI in management, while the third unit assessed information about the completers and the municipality. A link to the questionnaire was sent to the institutions by email, which was sent to a total of 2,131 different addresses on 10 May 2021. The opportunity to complete the questionnaire was closed on 4 June 2021, by which date a total of 216 questionnaires had been received that were at least partially completed, representing 6.83% of all municipalities in the country. 198 respondents answered each question.

Our sample is neither random nor representative. We sent 2,131 emails, but there were a total of 3,178 local governments in Hungary in 2022. Thus, 33% of the

municipalities for which we did not find email contact could not be included in the sample. In addition, the western regions, which represent 54 percent of the Hungarian municipalities, are under-represented in the sample (as these municipalities tended not to return the completed questionnaire), with 36 percent, compared to the central and eastern regions, which are over-represented. Due to these reasons the focus of the analysis is on the measures of relationship and on the effect sizes. The results of significance tests are also shown, but these should be taken as limited information. Moreover, 84.7% of the respondents are financial professionals (94 inferior and 89 superior accountants) and only 10.2% (22 respondents) represent the policy makers. (The remaining 5.1% did not indicate their position.) However, this subsample of 22 items is too small to allow for reliable statistical analyses, so our findings on policy makers should be looked at with a critical eye.

In the analyses, strongly related scale-type sub-questions measuring similar aspects were compressed into artificial variables using principal component analyses (PCA). Means were compared using t-tests, and relationships between scale and categorical variables were characterized using analyses of variance (ANOVA). In this case, effect sizes were measured using Eta squares and significances were tested using F-tests (*Table 3*). Relationships between categorical variables were measured using Cramer coefficients and differences between distributions were tested using Fisher's exact tests.⁴

In the tables, the results significant only at the 10 percent level are marked with one asterisk and results significant at the 5 percent level are marked with two asterisks. Analyses were performed in SPSS software.

Table 3. Overview of the analyses

Number of questions	Questions measure:	Usage of questions	Method	Results
1-4	Satisfaction with accounting system	Create artificial variables representing the satisfaction with accounting system	Principal Component Analysis	Appendix 2 Table 4
		Analyze the differences in responses between different stakeholders	Only visualization	Figure 1

⁴ For 2x2 categories, Fisher's exact test is a more commonly used procedure, as the independent distribution of categories tends to a binomial distribution. In the present study, we compare the proportions of two groups (senior and junior accountants) of two response options (yes or no) to each question.

5-12	Usage of accounting tools	Analyze the distribution of responses within the senior and junior accountants	Cross Tabulation analysis Measure of association: Cramer V Significant test: Fisher's Exact test	Figure 3 Table 7
13-14	Role of accounting tools in decision making	Create artificial variables representing the overall role of budgetary and financial accounting	Principal Component Analysis	Table 5
		Analyze the differences in responses between senior and junior accountants	Analysis of Variance (ANOVA) Measure of effect size: Eta square Significant test: F-test	Appendix 3 Figure 2 Table 6
15	General usefulness of accounting systems	Analyze the differences in responses between different stakeholders	Only visualization	Figure 1
13-14 and 15	Analyze the relationship between the usefulness of financial accounting system and the role of certain accounting tools		Correlation Analysis	Figure 4

Source: author's compilation

4. Results

In this section, we present the main results of the questionnaire. The sections show the general impression of the accounting system, then the usage patterns of the AI will be presented. Then the experiences of different stakeholder groups will be conferred.

4.1. Analysis of the responses to the questionnaires

The responses to the questions were first examined using principal component analysis, within three artificial variables created: the variable "definiteness", which measured the accuracy and delimitation of the accounting rules, the variable "actuality", which captured the timeliness of the data provided by the accounting system, and the variable

"contribution", which measured the contribution of AI to the management. By combining the three artificial variables, we created the indicator "overall satisfaction" (Table 4).

Table 4. Correlation coefficients and retained information values for artificial variables

Questions	R (1st level)	Artificial variables (1st level)	R (2nd level)	Artificial variable (2nd level)	
Question 1: Well-defined system					
1.1. Budgetary accounting	0.888	Definiteness ($R^2 = 66.21\%$)	0.843	General satisfaction ($R^2 = 75.50\%$)	
1.2. Financial accounting	0.876				
1.3. Accounting according to COFOG	0.727				
1.4. Rules of evaluation	0.751				
Question 2-3: Up-to-date information					
2. Evaluation of accounts receivables	0.965	Actuality ($R^2 = 93.15\%$)	0.868		
3. Evaluation of liabilities	0.965				
Question 4: Contribution to activities and decisions					
4.1. Recording of commitments	0.799	Contribution ($R^2 = 68.03\%$)	0.895		
4.2. Cost price calculation	0.735				
4.3. Regular management	0.829				
4.4. Managerial decision making	0.854				
4.5. Planning of decrees	0.858				
4.6. Efficient management	0.865				

Source: author's compilation based on the SPSS

When examining the means and variances of the principal components, it is apparent that respondents had similar evaluations of each aspect of the accounting system, with only the average assessment of usefulness being significantly lower than for the other factors. Looking at the different stakeholder groups, it is clear that accounting professionals generally rate the accounting information system higher than policymakers in all aspects (*Appendix 2*). On the other hand, the deviation and relative deviation among accounting professionals is lower than for respondents classified in other categories, and the professionals' view of the information system is more homogeneous and unanimous than that of policymakers. Therefore, based on the results of the t-statistics, we can only conclude that respondents in the other category have a significantly lower perception of the accounting information system in terms of timeliness and contribution.

These differences may arise because different stakeholders encounter the accounting information system in different contexts (for example, while junior accountants are concerned with recording and producing data, senior accountants may use it to make recommendations and decisions), or because different information may be important to different groups. There are greater differences in the perception of financial accounting and BA. Strong relationships were observed between data typically from BA and typically from FA in the assessment of the consideration of different accounting data in decision making processes. Therefore, in this case as well, principal components were constructed to characterize the perception of each stakeholder on accounting systems in general (*Table 5*).

Table 5. Correlation Coefficients of Artificial Variables Representing the Role of Accounting Systems

Type of process	Assessment of the inclusion of certain data	Principal Components ($R^2 = 76.35\%$)	
		1. Usage of data from BA	2. Usage of data from FA
Investment	Budget Balance	0.830	0.142
	P&L	0.154	0.895
	Accruals	0.179	0.873
	Value of Provisional and Final Commitments	0.826	0.198
	Amortization (current year)	0.135	0.859
Other	Budget Balance	0.853	0.098
	P&L	0.149	0.903
	Accruals	0.163	0.866
	Value of Provisional and Final Commitments	0.826	0.198
	Amortization (current year)	0.129	0.866

Source: author's compilation based on the SPSS

The first principal components reflect the role of BA, with which budget balances and commitments are closely and positively related, while the second principal components represent the role of data from FA, with which P&L, accruals, and amortization are closely and positively related.

In general, the usefulness of AI was generally rated lower than its potential usefulness. Separating out the responses for each group, it can be concluded that non-accountants do not make a significant difference between BA and FA in terms of either their role or their usefulness. However, accounting professionals generally preferred BA for both questions. The largest differences are found among senior accountants, who rated FA significantly lower than junior accountants in terms of both usage and usefulness. This suggests that those with accounting knowledge perceive the importance of accrual accounting but use this information only marginally (*Appendix 3*). Therefore, we can assume both the senior and junior accountants experience the importance of non-financial information in decision-making. This phenomenon may arise from the limitation of the scope of the decision-making.

Comparing the usefulness of the two accounting systems, we observe that accountants rate BA as more useful, while policymakers rate the FA as more useful. This phenomenon may be caused by the fact that accountants are primarily faced with the accounting system from the administrative side, so for them, compliance with the rules is a priority, which BA should also provide.

In the BA, budget execution and compliance with Financial Regulations can be better monitored. Thus, accountants rely heavily on BA in their daily work. For policymakers, a higher rating of FA may be a consequence of the fact that they can now assess accounting from a less administrative side, through the enforcement of rules, and associate a decision support function. At the same time, this is contradicted at first sight by the fact that the contribution of AI to management was rated lower than that of accountants.

Accounting professionals generally find information from accounting more useful. The most striking differences were in the questions related to the contribution of activities. In this block of questions, the Likert scale scores for AI were on average more than five-tenths lower. In addition, a similar difference was observed in the overall usefulness of BA. However, due to the small number of policymakers (22) and the non-normal distributions, significance tests cannot be applied (*Figure 1*).

It can also be observed that policymakers attribute a smaller contribution to AI in all activities, thus the lack of a decision-support role is not limited to a single case but is common. There are several possible explanations for this phenomenon: on the one hand, it is possible that the management powers of local governments are too narrow and that external circumstances determine decisions more than their own decisions; on the other hand, it is also possible that decision-makers are unprepared (Jorge et al. 2019), while it is also possible that they understand these accounting data and have a need for them, but do not consider them usable (van Helden & Reichard 2019).

Figure 1. Average assessment of the contribution and general usefulness of the accounting information system in different groups

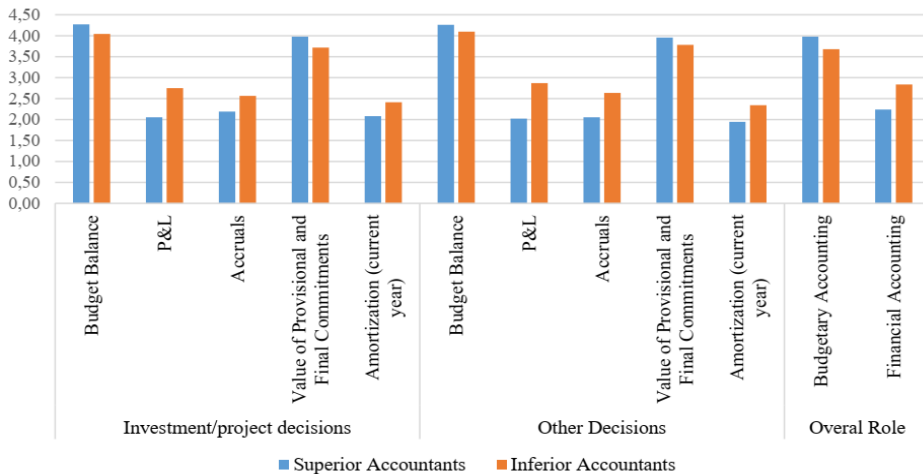


Source: author’s compilation

4.2. Junior accountants believe that financial accounting has a more important role, compared to senior accountants

If we look only at accounting professionals, we do not find major differences in the perception of the accounting information system. In this case, there are significant differences between the two groups in their perception of the importance of BA and FA.

Figure 2. Average role of accounting data in different decision-making processes, according to senior and junior accountants



Source: author’s compilation

The importance of budget balances and commitments are considered by both junior accountants and senior accountants as the most important factors when making various investment and other decisions. This highlights the administrative role of AI (*Figure 2*).

However, junior accountants also place more importance on other factors related to accrual accounting, such as P&L, accruals, or amortization. This different approach is also reflected by principal components; while there is no significant difference between the two groups for BA, the role of FA is considered higher by junior accountants.

The separation between the ratings of senior and junior accountants was examined using analyses of variance (*Table 6*). In general, there were higher differences between the two groups for other decisions. The largest differences were observed for P&L both for investment type decisions and in other decisions. This is followed by accruals, then amortization (current year). In terms of overall utility, only the perception of FA differed between senior and junior accountants.

Table 6. The relationship (Eta) and effect size (Eta squared) between the assignment of accountants and the perception of the role of data in local government decisions

Type of decision	Factor	Eta ²
Investment	Value of Budget Balance	0.012
	P&L	0.069**
	Accruals	0.020*
	Value of Provisional and Final Commitments	0.013
	Amortization (current year)	0.018*
Other decisions	Value of Budget Balance	0.006
	P&L	0.099**
	Accruals	0.050**
	Value of Provisional and Final Commitments	0.006
	Amortization (current year)	0.027**
General usefulness	Budgetary Accounting	0.003
	Financial Accounting	0.043**

Source: author's compilation based on the SPSS

4.3. The junior accountants are of the opinion that the local governments use accounting tools to a greater extent

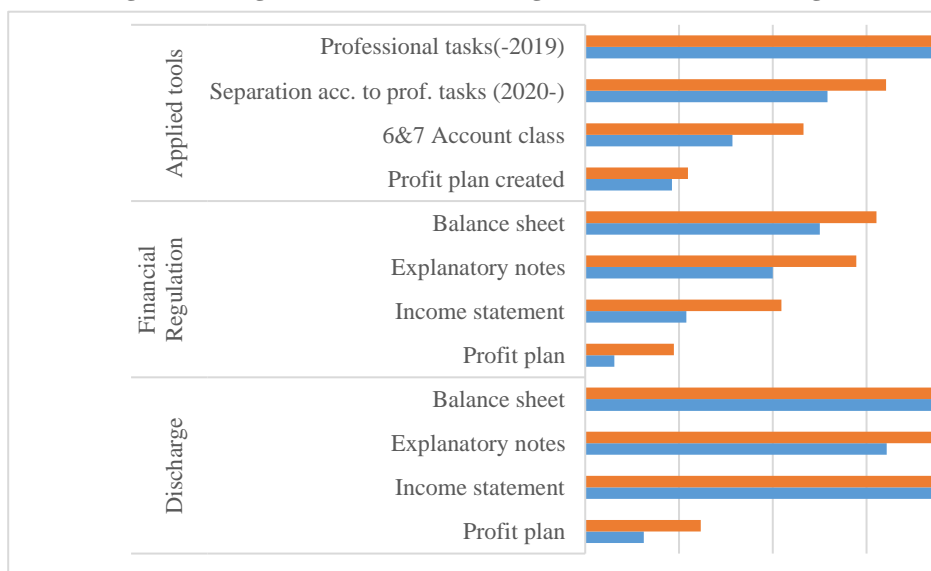
Significant differences between junior and senior accountants can also be found in the tools used in public accounting and in fiscal and discharge regulation. While there are no differences in the relative order of the applied tools, the most common response by

both junior and senior accountants is Professional Tasks⁵, used by more than 90 percent of municipalities, while the least applied tool is Profit Plan, used by only about one-fifth of institutions. However, junior accountants were more likely to say that their local government uses these tools (*Figure 3*).

The situation is similar for documents in the budget and discharge regulation. A significantly higher proportion of junior accountants responded that these documents are part of their municipality's regulations. The discrepancy is particularly striking for the Financial Regulation, and within that for the Income Statement and Profit Plan.

Significant differences in the distribution of accounting tools used between senior accountants and junior accountants were tested using Fisher's exact test, and the strength of the relationship was characterized using Cramer coefficients. Significant differences were found for separation according to professional tasks and an application of 6&7 Account Class (which may support a specific assessment of camel activities), which was marked by junior accountants more than 10 percentage points more often.

Figure 3. Usage of different accounting data in decision-making



Source: author's compilation

There are also significant differences in the documents included in the budget and discharge regulations. A higher proportion of junior accountants responded that these documents were part of their local government's regulations. The difference is particularly striking for Financial Regulation, where differences were significant at the 5 percent significance level for three documents (*Table 7*).

⁵ Category system for grouping public tasks performed, core professional activities, accrual-based costs, and revenues. The task and the accounting data of the institutes of the public sector had to be separated in accordance with the professional tasks until 2019. From 2020 is voluntary to choose this approach.

Table 7. The status of accountants and the relationship between the use of each tool

Aspect	Factor	Cramer's V
Applied tools	Professional Tasks (-2019)	0.150**
	Separation according to professional tasks (2020-)	0.126*
	6&7 Account Class	0.155**
	Profit Plan created	0.042
Financial Regulation	Balance Sheet	0.122*
	Income Statement	0.218**
	Explanatory Notes	0.178**
	Profit Plan	0.194**
Discharge	Balance Sheet	0.046
	Income Statement	0.052
	Explanatory Notes	0.147**
	Profit Plan	0.157**

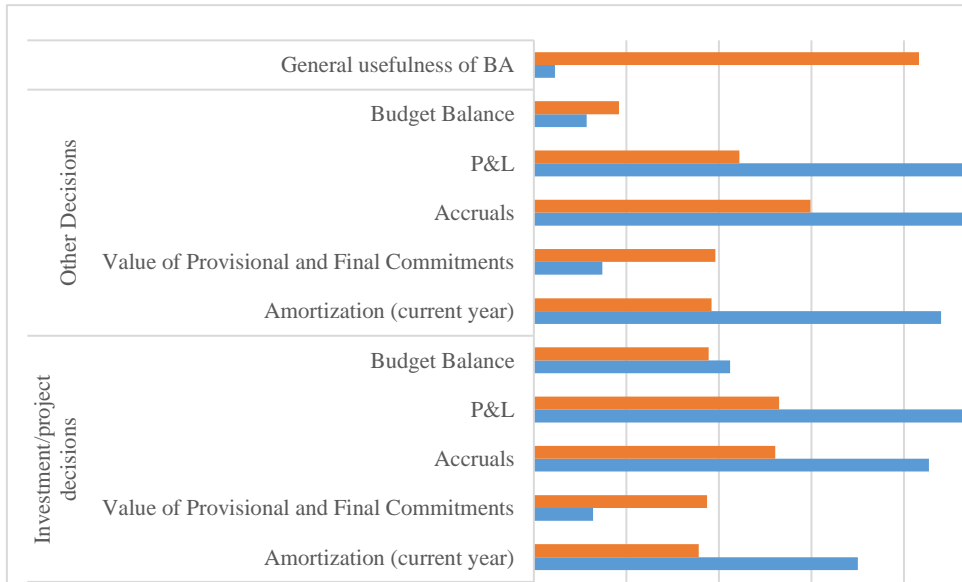
Source: Calculated by the authors using SPSS

4.4. The links between the usefulness of financial accounting and the role of accounting tools present a significantly different picture for junior accountants and senior accountants

The strength of the relationships between accounting utility and the importance of factors considered in decisions is different among senior accountants and among junior accountants. As mentioned earlier, junior accountants perceive BA and FA to be of similar importance. This co-movement between the two aspects can also be observed in the correlation coefficient between their utility ratings, as there is a moderately strong positive relationship between the two variables among junior accountants ($R=0.416$). The more useful a junior accountant perceives BA to be, the more useful they tend to perceive FA to be and vice versa. In contrast, for senior accountants, no significant relationship is observed between the two variables ($R=0.023$). So, in general, it is not true that a senior who perceives information from BA useful would find FA-related information equally useful, but neither is the reverse. Seniors distinguish the two information systems more sharply. This may stem from being more professionally prepared, and also from the fact that they form a link between the junior accountants and the decision-makers, and see the processes from beginning to end, thereby having the most information.

For junior accountants, no significant or only weak relationships are observed between the usefulness of FA data and the inclusion of certain factors, while for senior accountants these relationships are generally much stronger (*Figure 4*), particularly concerning the use of tools of FA data; P&L, accruals, and depreciation.

Figure 4. The correlation coefficient of the usefulness of FA with the role of certain accounting data in decision-making



Source: author’s compilation based on the SPSS

This can be explained by the fact that it is mainly senior accountants who have a say in the extent to which different AI is taken into account in local government decisions. Even if a junior accountant considers FA more useful, it does not have a significant impact on the decision-making process.

5. Conclusion

Our study examined the impact of the introduction of accrual accounting in the Hungarian public sector accounting for local government. The current accounting system was introduced in 2014, which provided enough time before the data collection to gain enough experience to develop good practices.

As several studies have shown, the introduction of accrual accounting does not always provide the expected results. One common reason behind this is the lack of usage of the gathered accounting information. Even though the accounting information system is considered to be well-defined and up-to-date by stakeholders, its data are typically not used in planning and decision-making. A similar conclusion was drawn for the Hungarian system of public accounting.

Our aim was to examine the usage of Accounting Information, which data are preferred by the stakeholders, and who rates the accrual accounting data the highest. To investigate this, a questionnaire survey was carried out and 216 responses were received from different stakeholders. However, we have to highlight that the population of the stakeholder groups was varied, therefore the applicable statistical approaches were

limited. The sample does not properly describe the information use patterns for the whole local government subsystem.

The study aimed to explore which data source is the most relevant for the stakeholders. Senior accountants typically rate FA data higher in their decision making and generally rate the usefulness of BA lower. This may be due to the fact that they are users of the information and are more able to judge the use of the data produced. Meanwhile, junior accountants are typically data preparers, so for them, accounting is more of an administrative role. For this reason, BA becomes more relevant to them, which may lead to a more positive perception of cash-based accounting.

For policymakers, the information was less relevant, which may be because they have to take other (non-accounting) information into account in their decisions, but it may also indicate that the scope for municipal management is very limited and there is no possibility to include accounting data, or it may also indicate a lack of awareness on the part of decision-makers. Similarly to policymakers, accounting professionals also show a dominance of the cash approach, which, in our opinion, is also due to the cash-based budgeting approach.

Another goal was to explore which stakeholder group finds the accounting data the most useful and which group members value financial accounting more. Across all stakeholder groups, for both types of accounting, we observe that accounting data is perceived as fundamentally more useful by stakeholders than the role it plays.

All this suggests that not all potential has yet been realized and the intended policy implications have not appeared. AI does not have a decisive role in the public sector despite its punctuality and actuality. This may highlight the limitations of the decision-making in the Hungarian local government subsystem, the low level of understanding of the decision-makers regarding accounting, or the importance of the non-accounting information.

The higher level of usage be achieved without raising awareness of accounting data and adapting accounting data to user needs. It is true that in order to adapt data to user needs, it is also important to have the right knowledge of users to formulate their needs. The reporting, the budget planning, and the budgeting should be synchronized. This would develop the understanding of the AI, and support the usage of it. Based on this, we can say the introduction of the accrual budgeting would have a positive impact from this point of view.

The research did not reveal the reasons for the underuse of information, but understanding this is a key issue for improving management efficiency, however the authors consider these factors important, which should be examined in future research.

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APPENDECIES

Appendix 1. Structure of Questionnaire
Transparency of the accounting system

Questions	Response options	Code
1. To what degree do you consider the following factors to be precisely defined and delimited within the public accounting system?		
Accounting for economic events in the budgetary accounting	Scale 1 to 5	A1_1
Accounting for economic events in the financial accounting	Scale 1 to 5	A1_2
Accounting for economic events by government function (COFOG)	Scale 1 to 5	A1_3
Rules for valuation of assets and liabilities	Scale 1 to 5	A1_4
2. How strongly do you agree with the following statement? The public sector accounting system provides up-to-date information on the outstanding amount of receivables.		A2
	Scale 1 to 5	
3. How strongly do you agree with the following statement? The public sector accounting system provides up-to-date information on the amount of liabilities		A3
	Scale 1 to 5	
4. In your opinion, to what extent does the general government accounting system contribute to the following activities?		
Keeping up-to-date records of commitments	Scale 1 to 5	A4_1
Calculating the cost price of activities	Scale 1 to 5	A4_2
The management of appropriations in accordance with the law	Scale 1 to 5	A4_3
Supporting management decisions	Scale 1 to 5	A4_4
Planning the Financial Regulation	Scale 1 to 5	A4_5
Efficient management	Scale 1 to 5	A4_6
5. Does your local government or institution use the 6-7 account classes to meet management information needs?		A5_K
	Yes/No / I am not aware of it	

6. Has your local government or institution used the Professional Tasks by the end of 2019?	Yes/No / I am not aware of it	A6_K
7. Has your local government or institution used a professional task allocation from 2020?	Yes/No / I am not aware of it	A7_K
8. Has your local government or institution made a balance correction pursuant to Section 56/A of Government Decree 4/2013 (I.11) on Accounting for Public Finances?	Yes/No / I am not aware of it	A8_K
9. Is a profit plan based on financial accounting data prepared for each budget year?	Yes/No / I am not aware of it	A9_K
10. Are the following documents part of the budget proposal/regulation?		
Balance sheet	Yes/No / I am not aware of it	A10_1_K
Income statement	Yes/No / I am not aware of it	A10_2_K
Explanatory notes	Yes/No / I am not aware of it	A10_3_K
Profit plan	Yes/No / I am not aware of it	A10_4_K
11. Are the following documents part of the discharge regulation?		
Balance sheet	Yes/No / I am not aware of it	A11_1_K
Income statement	Yes/No / I am not aware of it	A11_2_K
Explanatory notes	Yes/No / I am not aware of it	A11_3_K
Profit plan	Yes/No / I am not aware of it	A11_4_K
12. Are the results for the current year compared with those of previous years? For example, when planning/closing accounts/preparing decisions, are the results of the current year compared with those of previous years?	Yes, regularly/ Yes, but not in each year/No/I am not aware of it	A12_K

Usage of information from the public sector accounting system		
13. Please assess the extent to which the following data are taken into account in the local government's investment decision-making process		
Budget balance	Scale 1 to 5	B_13_1
Profit or loss	Scale 1 to 5	B_13_2
Accruals	Scale 1 to 5	B_13_3
Commitments and payment obligations	Scale 1 to 5	B_13_4
Amortization	Scale 1 to 5	B_13_5
14. Please assess the extent to which the following data are taken into account in the local government's other than investment-related decision-making process.		
Budget balance	Scale 1 to 5	B_14_1
Profit or loss	Scale 1 to 5	B_14_2
Accruals	Scale 1 to 5	B_14_3
Commitments and payment obligations	Scale 1 to 5	B_14_4
Amortization	Scale 1 to 5	B_14_5
15. How useful do you consider the following data sources for the efficient management of the local government?		
Data from Budgetary Accounting	Scale 1 to 5	B_15_1
Data from Financial Accounting	Scale 1 to 5	B_15_2
16. Do you think that, overall, it is worth producing this information? To what extent is the usefulness of the information produced commensurate with the investment (time, resources, and costs) required to produce it?	The usefulness of the information is significantly lower than the value of the resources required to produce it / The usefulness of information tends to be lower than the value of the resources required to produce it / The usefulness of the information is almost equal to the value of the resources required to produce it / The usefulness of information tends to be higher than the value of the resources required to produce it / The	B_16_K

	usefulness of information is significantly higher than the value of the resources required to produce it	
17. Do you think that budgetary or financial accounting information is more useful for the efficient management of local government?	Budgetary accounting data are much more useful / Budgetary accounting data are more useful / Both are equally useful / Financial accounting data are more useful / Financial accounting data are much more useful	B_17_K
Work experience and demographics		
18. How long have you been employed by your current local government / institution?	Less than 1 year / 1-5 years / 5-10 years / More than 10 years	D_18_K
19. What is your current job title?	free-form completion	D_19_K
20. What is the permanent population of the local government where you are currently employed?	Fewer than 500 people / between 500 and 999 people/ between 1000 and 1999 people / between 2000 and 4999 people / 5000 people or more / I work for a county government	D_20_K
21. In which major region is the local government where you are currently employed located?	Budapest / Central Hungary / Northern Hungary/ Central Transdanubia / Southern Transdanubia /Western Transdanubia/ Northern Great Plain / Southern Great Plain	D_21_K

Source: Edited by the authors

Appendix 2. Experiences with the accounting information system by type of respondent

	Definiteness		Actuality		Contributions		General satisfaction	
	avg.	std. dev.	avg.	std. dev.	avg.	std. dev.	avg.	std. dev.
Accountants	4.13	0.64	4.09	0.82	3.86	0.76	4.03	0.64
Junior accountant	4.13	0.65	4.09	0.85	3.91	0.75	4.04	0.68
Senior accountant	4.14	0.64	4.08	0.79	3.81	0.77	4.01	0.61
Policymakers	3.91	0.78	3.57	1.02	3.28	1.01	3.69	0.70
Total	4.09	0.71	4.02	0.84	3.78	0.82	3.98	0.66

Source: Calculated by the authors using Microsoft Excel

Appendix 3. Assessment of financial and budgetary accounting by type of respondent

	Usage of data from FA		Usage of data from BA		Usefulness of data from FA		Usefulness of data from BA	
	avg.	std. dev.	avg.	std. dev.	avg.	std. dev.	avg.	std. dev.
Accountants	2.54	1.09	3.83	0.86	3.93	1.00	4.38	0.80
Junior accountant	2.83	1.09	3.68	0.90	4.13	0.90	4.34	0.82
Senior accountant	2.24	1.01	3.98	0.81	3.72	1.06	4.43	0.78
Policymakers	3.23	1.08	3.20	1.08	3.81	1.21	3.68	1.09
Total	2.61	1.11	3.76	0.91	3.92	1.02	4.31	0.86

Source: Calculated by the authors using Microsoft Excel