

**DOCTORAL (PHD) DISSERTATION
THESES**

ETELKA KEREKES

GÖDÖLLŐ

2024



HUNGARIAN UNIVERSITY OF AGRICULTURE AND LIFE SCIENCES

**OPPORTUNITIES FOR THE DEVELOPMENT OF THE CONTROL SYSTEM
OF BUSINESS COMPANIES ESTABLISHED BY THE HUNGARIAN
BUDGETARY BODIES**

GÖDÖLLŐ

2024

DOI: 10.54598/004480

Doctoral school

name: Hungarian University of Agriculture and Life Sciences Doctoral School of Economic and Regional Sciences (HUALS DSERS)

discipline: Management and Business Administration Studies

head: **Dr. habil. Zoltán Bujdosó**
Campus-Director, full professor,
Hungarian University of Agriculture and Life Sciences Károly Róbert Campus

Supervisors: **Dr. habil. Zoltán Zéman**
full professor
John von Neumann University
Doctoral School of Management and Organizational Sciences

Dr. Sándor Gáspár
Assistant Professor
Hungarian University of Agriculture and Life Sciences,
Institute of Rural Development and Sustainable Economy

.....
..
Approval of Head of Department

.....
..
Approval of Supervisor

.....
..
Approval of Supervisor

Table of Contents

1. BACKGROUND AND OBJECTIVES OF THE WORK	5
2. MATERIAL AND METHOD	9
2.1. The sample.....	9
2.2. Research method.....	9
3. RESULTS AND THEIR DISCUSSION.....	13
3.1. The result of qualitative research	13
3.2. Results of quantitative research.....	14
3.3. Summary of hypotheses	15
4. CONCLUSIONS AND RECOMMENDATIONS.....	25
5. NEW SCIENTIFIC RESULTS.....	28
6. PUBLICATIONS OF THE AUTHOR RELATED TO THE TOPIC OF THE DISSERTATION.....	29
7. BIBLIOGRAPHY	32

1. BACKGROUND AND OBJECTIVES OF THE WORK

"One of the most important legal requirements for the management of the budget body is that the tools and resources entrusted to them are used economically, efficiently, effectively and legally. In order to measure this, the indicators (indicators) that can be used to measure economy, efficiency and effectiveness separately and in relation to each other must be developed. The expediently chosen indicators enable the management to use appropriate measures to make the three categories proportional to the achievement of the organization's goals" (NGM, 2017)

The first step of corporate controlling regulation is to assess how/where the external environment influences the company from the state it envisioned during the planning period. These must be continuously monitored using various methods to ensure the implementation of pre-planned responses to identified and assessed risks.

One element of the internal control system is the monitoring system. Internal control has a prominent role in this.

State-owned companies play a prominent role in national economies. The performance of public companies can have an impact on the country's sustainable economic operation and success. In addition to their economic importance, the role of state-owned companies is also of strategic importance. They influence the social and political balance of the country.

In my thesis, I examine the internal control system of state-owned economic companies with regard to *other organizations classified in the government sector*

My goal is to create a detailed material that summarizes/presents "good practices" and can also be used as information dissemination material for those who wish to navigate the internal control system and control work, as well as for

those interested in the profession. My primary goal is to help decision-makers in the further development of the internal control system, as well as to provide professional guidance to the heads of business associations of state and local government bodies. To prepare my dissertation, I will use my own experiences related to the effectiveness, efficiency and economic effects of the internal control system established and operated by my previous workplaces, as well as the measures taken to eliminate the deficiencies revealed by the audits. (Table 1).

1. table: Objectives of the research work

C1	PRESENTATION OF THE SIGNIFICANCE OF CONTROL AND CONTROL SYSTEM FOCUSING ON THE BUDGETARY BODIES.
C2	PRESENTATION OF THE CHARACTERISTICS OF THE CONTROL SYSTEM OF THE BUDGETARY BODIES.
C3	INVESTIGATION OF THE INTERNAL CONTROL SYSTEM OF ECONOMIC COMPANIES ESTABLISHED BY BUDGETARY BODIES AND ITS OPERATIONAL EFFICIENCY.
C4	ASSESSMENT OF THE KNOWLEDGE OF THE INTERNAL CONTROL SYSTEM OF THE BUSINESS COMPANIES ESTABLISHED BY THE BUDGETARY BODIES.

Source: own editing

When formulating my research questions, I considered the facts obtained from the literature and based on my own experiences as a basis. Sajtos and Mitev (2007) separate two basic question types: management and researcher questions. The managerial question formulates a practical problem and is addressed to specialists and researchers. A research question is a scientifically based question asked to solve a management problem. Finding the answer requires answering several research questions. In this case, a typical managerial question might be "The efficiency of the organization I lead is not adequate. What is the reason for this and how can the situation be improved?". To answer the leadership question, the

researcher must examine several areas. For example, a possible set of research questions is:

1. Does the organization's internal control system comply with the detailed and strict legal regulations?
 - 1a. Are the necessary documents available?
 - 1b. Are the internal control processes carried out by suitably qualified specialists?
 - 1c. Are the responsibilities clear?
2. If it complies with the legal conditions in all respects, is the internal control system able to operate with the appropriate efficiency?
 - 2a. Does following the rules or relying on practical experience result in greater efficiency?
 - 2b. Should all elements of the internal control system be treated with the same priority, or is there an order of importance between the elements?

Answering these research questions will help to assess the causes of inadequate efficiency and will hopefully also show improvement opportunities.

In order to achieve the research goals, based on the above, I formulated the following *hypotheses* :

1. *Knowledge of the internal control system of the investigated organizations is influenced by the field in which the respondent works.*
2. *The aspects considered when making organizational decisions differ depending on the organization's main field of operation.*
3. *The higher the position of the person in the organizational hierarchy, the less detailed approach is used in the evaluation of internal control systems*
4. *The demographic characteristics of the respondents and the ownership structure and scope of activities of the companies play a decisive role in knowing the processes of the internal control system.*

5. *The priority of the elements of the internal control system listed in the law is exceeded and differs from the practical priority experienced today.*
6. *Based on the literature, the importance of the internal control system as a whole and its individual elements is the same, but according to my assumption, the employees of the organization may judge the importance of the elements to be different from each other.*
7. *IT professionals can be classified as supporters of the internal control system rather than professionals.*

2. .MATERIAL AND METHOD

2.1. The sample

Since the purpose of my research is to examine the internal control system of economic companies founded by state and local government budget bodies (state, local government), I selected the sample to be examined as a first step. I searched for the economic companies that are fully or partially owned by the state or local government, so the total population examined is 251 organizations. I did not examine the associations, foundations, and those economic companies that were no longer available due to liquidation, liquidation or merger before or during the start of the research or that indicated that they did not wish to participate in my research. In addition to these narrowing conditions, the nature of the activities of the economic associations was included as a grouping criterion, but it was not important in the selection of the interviewees.

After defining the sample (249 organizations), the next decision to be made was the choice of the nature of the research method. I used both qualitative and quantitative methods and decided to statistically process their results. I did not ask the respondents for data that could be used to identify the company. The purpose of this was to receive honest feedback and evaluations regarding the state of the internal control system, and to ensure that the answers were not influenced by any fear or resentment due to subsequent identifiability.

2.2. Research method

The purpose of my research was to investigate the internal control system of economic companies founded by state and local government budget bodies (state, local government). For this purpose, I prepared a semi-structured interview and then a questionnaire based on the literature sources and my own work experience. Semi-structured interviews are important tools of qualitative research methodology, as they provide the interviewer with the opportunity to ask structured questions, but at the same time flexibly respond to the unique answers

of the respondents. In most cases, this methodology provides a deeper insight into the researched topic, as the interviewees can express their thoughts freely, and it is also possible to discuss unforeseen questions (Kvale & Brinkmann, 2009). The questions can be open or closed, but in both cases the goal is to make the answers easy to compare. Compiling the semi-structured interview questions was an essential condition for the construction of the quantitative research (questionnaire). I was also able to use it to supplement my own professional experience, and it greatly contributed to the collection of the appropriate depth and amount of information required for my research. The purpose of the interview was to assess whether the senior employees of other organizations classified in the government sector know the elements of their organization's internal control system, and if so, in what depth. I also examined whether the respondents participated in education related to the topic, and if so, how useful they found it. Using the answers, I prepared my questionnaire and formulated my 3rd and 7th hypotheses.

In the selection of the interviewees, for the sake of as much objectivity as possible, my primary consideration was that I had no previous connections or acquaintances with the given organization. Questions prepared in advance during the interviews served as a guiding thread. I conducted the investigation on different working days from February to May 2023. During this period, I conducted a total of 11 interviews. For the processing, I used both qualitative and quantitative text analysis methods. I made the latter with the TextAnalyzer application available online for free. In doing so, I mainly focused on keywords and their frequency of occurrence.

The analysis of these supplemented the results of the statistical analyzes with additional information.

For the questionnaire prepared for my quantitative research, I contacted the potential respondents online, via the central e-mail address displayed on their website, which must be published (Tse et al., 1995). The direct addressee of my

letter was the top manager, as he is responsible for building and operating internal controls. If the business company also published the e-mail address of the top manager, I used this contact directly for the inquiry. The basis for the selection of the organizations was the legal regulation related to the internal control system (Leavy, 2020; Seidman, 2003).

There are several groups of questions in the questionnaire (Peterson, 2000). Demographic questions serve to create groups within the sample. In the case of this questionnaire, I interpreted the adjective "demographic" more broadly than usual. On the one hand, I listed here the questions assessing the gender, age, and education of the person completing the questionnaire, which I placed at the end of the questionnaire (questions 23-25). Another group of demographic questions can be found at the beginning of the questionnaire and asks for the characteristics of the responding organization (ownership structure, type of settlement of headquarters/location and operating area/sector, questions 1-3), as well as the position of the respondent in the organization (position, work area, subordinates and number of superiors, number of years spent at the organization questions 4-8) clarify.

The other groups of questions examine knowledge of organizational processes and the internal control system (questions 9-10). I also asked about the existence and knowledge of the documents that are part of the internal control system (questions 11-14), and about the activities, processes, and aspects that are part of this system (questions 15-17). I also examined the respondent's image and opinion of the organization and the trainings related to his work (questions 18-22). The demographic questions are typically presented as nominal variables, the answers to the other questions include yes-no types, and can be answered on a 3- or 5-point scale. For the latter, a lower score means a more favorable answer.

After cleaning and coding the data, I began the statistical part of my own investigations. In my research, I used different statistical methods to analyze survey data related to management practice within the organization and the

assessment of internal control elements. All analyzes were performed using *IBM SPSS Statistics 25* and a significance level of 5% ($\alpha=0.05$) was used in all tests. Within the sample, I created two groups based on the answers to the questionnaires. In one group, I classified the respondents whose work is directly related to the internal control system. The other group included those who were not classified in the previous group. I analyzed and compared the performance of the two groups using statistical methods (chi-square test, Welch's ANOVA, correlation and association studies). After that, by creating a regression model, I looked for an answer to which factors and to what extent determine the knowledge of the processes of the internal control system that I examined. I created my own model of the elements of the internal control system with a model created after a correlation study.

3. RESULTS AND THEIR DISCUSSION

I will start the presentation of the results by presenting the results of the qualitative research, and then I will proceed with my findings related to some hypotheses of the quantitative research.

3.1. The result of qualitative research

Two of the managers were only aware of the existence of the internal control system in their company, while the others believe that this system works properly in their organization. The opinion of the three internal audit managers differs somewhat from this. Only one of them stated that the internal control system works well overall, while the others only partially, e.g. meets expectations in the economic field. This indicates that there are deficiencies in the functioning of the internal control system. This is probably contributed by the strict legal regulations, which dictate the elements and operation of the internal control system down to the last detail. However, the theory cannot be fully implemented in practice in all cases. Among the components of the system, risk management is clearly the most frequently mentioned element, followed by the control environment and control activities, communication, information security and monitoring with the same frequency. This fact also draws attention to the importance of the role of IT professionals. Ethical aspects and organizational culture were also named by one of the leaders. The frequent mention of risk management supports the fact that I used risk management as a research method in the questionnaire survey to model the internal control processes of the organization.

Internal audit managers are very familiar with each system component, but other managers are only partially aware of them. Those who stated that they do not know the internal control system also gave a similar answer to this question. Five respondents thought that knowledge of the elements of the internal control system was important for the proper performance of their own position. According to the other six people, including the three internal auditors, this knowledge is of prime

importance. In addition to the three internal auditors, three managers regularly participate in training. Internal auditors typically attend regular mandatory training. Five respondents, on the other hand, do not train themselves regularly. The majority of those attending the trainings find them useful or partially useful. Of the training forms, the interviewees clearly prefer the face-to-face form, only three people prefer to train themselves online. However, all respondents agree that they consider sessions focusing on practice and analyzing real cases and expert consultations to be the most useful.

The elements of the internal control system are used by seven people regularly, on a daily basis, primarily in the context of monitoring activities. The other four respondents also use these elements with varying frequency. I also asked my subjects what factors make it difficult for the internal control system to function, and what they recommend to solve this problem. Among the obstacles, management and employee resistance and lack of motivation are the main problems. This is followed by a lack of information and resources. As a solution, most people suggested a change of attitude and training, but the opinions also included optimizing the use of costs and resources. One person highlighted the role of information security.

The most diverse opinions were expressed in relation to the question of how much the internal control system contributes to efficient and effective operation. In this regard, the responses "in part", "to a varying degree", "well", and "excellently" occurred in almost the same proportion. One person said that for him it was more of a burden than a help. Among other suggestions, the readiness to be up-to-date, the strengthening of managerial commitment and the promotion of the acquisition of practical knowledge often occurred.

3.2. Results of quantitative research

A total of 249 questionnaires were sent out, of which 140 completed questionnaires were returned. Of these, there were 4 in which not every single

question was answered. Based on this, it can be concluded that among the responding companies, state-owned (55%) and those based in Budapest (49%) are the largest in the sample. The majority of respondents (73%) are organizational managers. According to their own admission, most respondents know about organizational processes, but they only know them in general terms. It is typical for organizational leaders that they regularly participate in training related to their job. Based on the demographic characteristics, 39 men (29%) and 97 women (69%) filled out the questionnaire, 3 respondents did not state their gender. Among the respondents, the group of those with a university degree has the largest number.

3.3. Summary of hypotheses

Hypothesis #1

This hypothesis dealt with the question of the elements and processes of the internal control system. I examined the elements of the system based on the availability and knowledge of the different document types. In the case of the founding document, operative plans, and strategic plans, even only 66-81% of the organization's leading respondents knew that they were part of the organization's internal control system. In relation to the controlling manual, based on the responses of the organizational managers, the possibility arose that more than half of the investigated companies probably do not have such a document, but the verification of this assumption would require further research. Only a quarter of the organization's managers reported the availability of internal regulations related to the performance of reporting tasks, which is also a worrying result. At the same time, the regulatory documents related to data management are available, which indicates that the GDPR and the possible sanctions related to non-compliance have motivated all organizations to prepare and make these documents available.

Responsibilities related to organizational processes have been defined in the majority of organizations, 90% of organizational leaders answered "yes" to this question. At the same time, only 77% of them know organizational processes in sufficient detail. In the field of risk management, the most important result is that, according to a part of the respondents of organizational managers, the currently used risk management strategy is not adequate and regular review is not typical either. This is clearly indicated by the lack of definition of residual risks mentioned by 30% of the respondents of the organizational leaders. Also worthy of attention is the fact that 20% of organizational leaders and respondents working in other fields reported that their organization does not examine corruption-related risks when assessing risks.

Hypothesis H1 , according to which the knowledge of the internal control system of the investigated organizations is influenced by the field in which the respondent works, **was verified**.

Hypothesis #2

This hypothesis investigated whether the sector of the given organization's activity is decisive in the development of the system of criteria for organizational decision-making. Based on my results, the assessment of the importance of expediency, economy, efficiency, legality and moral aspects is independent of the sector. Belonging to a sector is moderately decisive in terms of the importance of socio-cultural aspects , while efficiency may be more important in some sectors, but not to a significant extent. The examined decision-making aspects explain the entire decision-making process between 1.3-7%.

I failed to verify hypothesis H2, which assumed differences in the consideration of decision-making aspects according to the organization's main operational area

Hypothesis #3

According to my hypothesis, the answers to certain questions of the questionnaire are significantly influenced by how many subordinates the respondent manages. I found differences in the assessment of the importance of the control environment, risk assessment and control activities. The importance of these is considered less important by respondents who manage several subordinates. At the same time, the perception of the importance of information and communication and monitoring, as well as the frequency of participation in trainings, proved to be independent of the number of subordinates.

I managed to verify hypothesis H3, according to which the higher the position in the organizational hierarchy, the less detailed the approach used in the evaluation of internal control systems .

Hypothesis #4

With my fourth hypothesis , *I assumed that the demographic characteristics of the respondents and the ownership structure and scope of activities of the companies play a decisive role in knowing the processes of the internal control system* . Based on my results, it can be said that the managers of the organization are more aware of the processes of risk analysis than those working in other fields. It was also confirmed that the availability of appropriate documentation is essential for the operation of the internal control system. The effect of other demographic variables could not be demonstrated. Among the company characteristics, I found significant differences in the effect on the knowledge of the control system in the case of the nature of the position held at the company. According to my results, not only the areas of controlling and accounting are closely connected to the internal control system, but also the legal-administrative and consulting positions, while in the case of IT, I experienced a looser connection.

Based on the above findings, I was able to verify my hypothesis H4 , the results obtained from the investigation of the hypothesis sharpen the image of the subject with a lot of useful information.

Hypothesis #5

My fifth hypothesis raised the possibility of developing a new model. The literature model (Figure 1) and my own model created based on my results (Figure 2) outline a significantly different relationship between the elements of the internal control system.

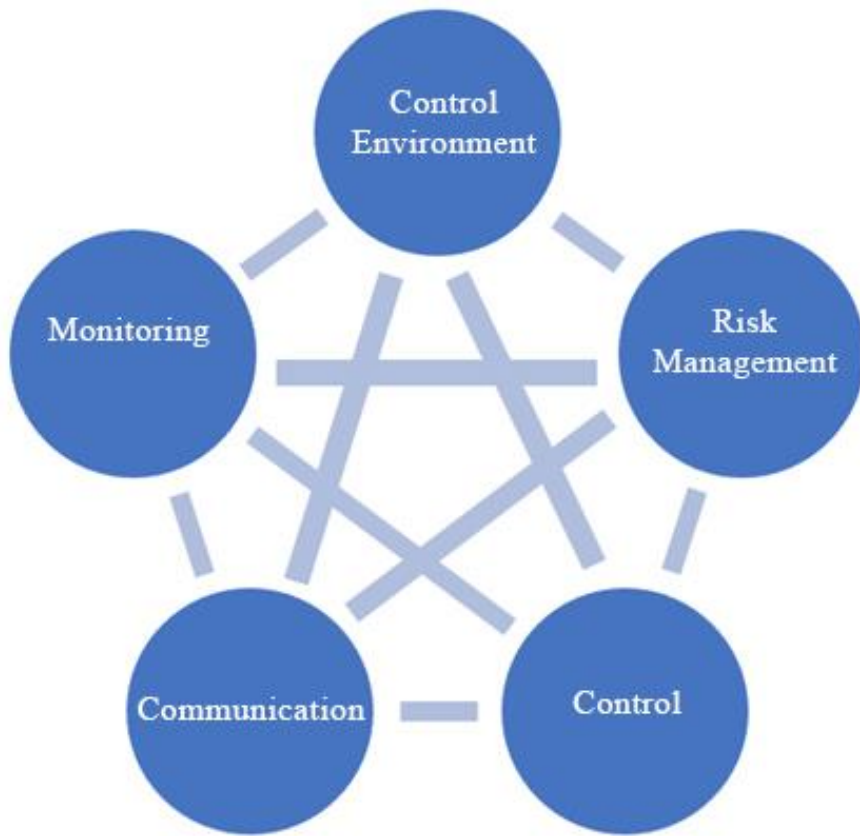


Figure 1. Elements of the internal control system (structural / theoretical model)
Source: own editing

Figure 2 shows my own modelshows.

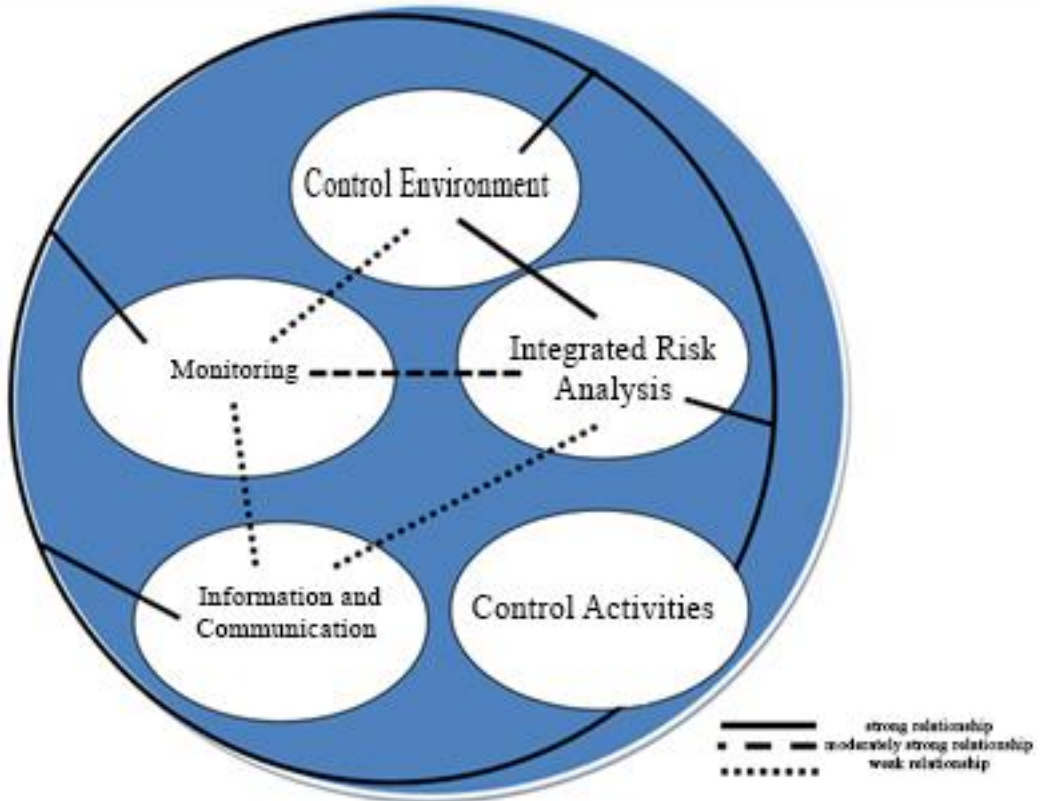


Figure 2. Experience of the elements of the internal control system network of connections (functional / practical model)

Source: own editing based on own results

Based on the figure, there is a strong ($r > 0.6$) relationship between the control environment and the risk elements, and the relationship between monitoring and communication almost reaches the same level. There is a medium ($0.3 < r < 0.6$) correlation between monitoring and risk management. A weak relationship ($r < 0.3$) can be shown between the control environment and communication, also between the control environment and monitoring, and risk management and communication. these findings are summarized in my own model. According to the literature/structural model, each element of the internal control system plays an equally important role in the operation of the system.

Based on the experiential/functional model, however, the role of control is decisive. This sets the frame for the rest of the model. Among these elements, the role of risk is the most significant, it has the most and strongest significant relationship. My model well supports my previous decision that I assessed knowledge of organizational processes based on questions about risk management.

Based on this, it can be concluded that I managed to prove my hypothesis H5, according to which the priority of the elements of the internal control system listed in the legislation exceeded and differs from the practical priority experienced nowadays .

Hypothesis #6

While, based on the review of the literature, the importance of the elements of the internal control system is the same, my own results paint a different picture. To the question asked at the theoretical level (which directly inquired about the importance of the elements of the internal control system), the respondents answered in accordance with the literature. On the other hand, the preferences developed differently based on the answers given to the indirect question (in which field would you like to complete a course), as a clear ranking was formed here:

1. communication
- 2-3. risk analysis
- 2-3. monitoring
4. control activity
5. control environment

Based on this result, I also managed to verify my hypothesis H6.

Hypothesis #7

According to the hypothesis, IT professionals can be classified as supporters of the internal control system rather than those performing professional activities .

During the examination of this hypothesis, I compared the groups of computer scientists, internal auditors and workers performing professional activities based on several aspects. My results showed that in terms of their knowledge of the processes of the internal control system, their ability to manage information and their interest in non-mandatory training, IT professionals are significantly more similar to internal auditors than to the group of professionals. These results support the similar results found in hypothesis H4.

This result confirmed my 7th hypothesis.

Table 3 summarizes the results of the hypothesis testing. In addition to the results of the hypothesis test, the table also contains my new scientific results and my recommendations based on them.

Table 3. Summary of the results of the hypothesis test

Serial number	Hypothesis	Method	Result	A new scientific result
H1 (C4)	Knowledge of the internal control system of the investigated organizations is influenced by the field in which the respondent works.	χ^2 test	I verified	The organization's internal control processes (practice) are not fully in line with legal regulations. This probably does not refer to ignoring the rules, but rather to the fact that 100% compliance with the rules is sometimes not possible in practice.
H2 (C3)	The aspects considered when making organizational decisions differ depending on the organization's main field of operation.	ANOVA/Welch-ANOVA Fisher test	I didn't prove it	Organizations consistently apply the aspects of economy, efficiency, legality and morality. There are no significant differences in the other aspects either.
H3 (C2)	The higher the position of the person in the organizational hierarchy, the less detailed the approach used in the evaluation of internal control systems.	Kendall's tau Goodmann–Kruskal gamma χ^2 test of independence	I partially confirmed it	The higher the person filling out the questionnaire is in the organizational hierarchy, the less importance he attaches to the internal control system.
H4 (C4)	The demographic characteristics of the respondents and the ownership structure and scope of activities of the companies play a decisive role in knowing the processes of the internal control system.	multivariate linear regression road model (SEM – Structural Equation Model)	I verified	The managers of the organization are more aware of the processes of risk analysis than those working in other areas. It was also confirmed that the availability of appropriate documentation is essential for the operation of the internal control system. According to my results, not only the areas of controlling and accounting are closely related to the internal control system, but also legal-administrative and consulting jobs.

H5 (C2)	The priority of the elements of the internal control system listed in the legislation is exceeded and differs from the practical priority experienced today	correlation test (Pearson correlation)	I verified	The legal regulation of the internal control system is primarily structurally based. However, the practice focuses on activities instead of structure.
H6 (C2)	Based on the literature, the importance of the internal control system as a whole and individual elements is the same. However, the employees of the organization may judge the importance of the elements to be different from each other.	descriptive statistics cross board quantitative text analysis (keyword frequency)	I verified	The guidelines and international recommendations related to the internal control system (theory) and the processes related to the internal control system taking place at the organization (practice) are not fully consistent with each other.
H7 (C3)	Because of its importance, information security should be part of the internal control system, since it is one of the most vulnerable parts of almost all organizations.	ANOVA/Welch- ANOVA, Games-Howell post- hoc test	I verified	Due to the growing role of information technology and information security, IT professionals (persons responsible for information security) can be classified as part of the internal control system.

Source: own editing .

4. CONCLUSIONS AND RECOMMENDATIONS

I found that the internal control system of a significant part of the investigated organizations was incompletely developed. On the one hand, the employees of the organizations concerned do not know the processes of their organization in sufficient depth, and on the other hand, the necessary internal regulations are not fully available.

In the literature review, I presented in detail the interpretation of the internal control system from various approaches:

The Basic Law stipulates that business organizations owned by the state and local governments must operate legally and responsibly, ensuring expediency and effectiveness, while public funds and national assets must be managed transparently (Basic Law, 2011). In the development and internal control of the internal control system of state-owned economic companies, the application of the SAINT model can help in assessing compliance with integrity and ethical standards, as well as in the management of deficiencies, thus contributing to the improvement of organizational integrity and ethical behavior.

The internal control system of public organizations consists of various elements that work in coordination to ensure the efficient operation of the organization and are an integral part of the organizational culture (Pajor & Szabó, 2022). In the literature, the concepts of internal control and performance are intertwined, where control is often defined as performance-promoting systems that link order and efficiency to successful operation (Domokos, 2011; Roóz & Sztanó, 2000; Simons, 2000; Naidu & Rao, 2008).

§ 69 of the Áht states that the head of the budget body (the head of other organizations classified in the government sector) is responsible for the creation, operation and development of an internal control system.

According to the legislation, the internal control system includes processes aimed at managing risks and obtaining objective certainty. This system is intended to ensure that operational goals are achieved, that management activities are carried out regularly, economically, efficiently and effectively, that accounting obligations are met, and that resources are protected from losses and improper use.

Based on my research, I came to the conclusion that, compared to what was described above, the internal control system is not only process-like, but also relevant to information security, since information security is a fundamental requirement for all elements. The basic condition for compliance with this requirement is to have an efficient IT system that complies with the legal provisions and is able to enforce them. I would therefore add to the official interpretations above that **the internal control system is also an information security process system**. This approach emphasizes that the internal control system not only generally supports the achievement of the

organization's goals, but is a basic condition for the safe operation of a given organization, which is also the indivisible task and responsibility of management.

Based on my new scientific results, I formulated the following proposals for decision-makers to consider:

The results of my research highlight that the shortcomings of the internal control system of other organizations classified in the government sector also hide many opportunities for improvements. Weaknesses in organizations not only reduce the effectiveness of the internal control system, but can also become an obstacle to achieving organizational goals. Furthermore, this can have a negative impact on the transparent use of public funds and the service of the public interest. These results provide well-founded guidelines for the areas in which further efforts need to be made in order to strengthen the internal control system, contributing to increasing the efficiency and transparency of organizations.

1. Despite the legally detailed regulation, the regularization of all operational areas of systems that are deficient in many aspects requires special attention. The application of the rules is not only a formality, but also a guarantee of the safety and reliability of organizational processes. However, for the sake of such comprehensive transformations, it is essential to continuously review the legal framework and adapt it to practical needs. **Middle managers should be** primarily involved in developing an up-to-date internal control system, as they are the link between the employees operating the system and the top management, which bases strategic decisions on the output information of the system. The role of middle managers in this process is crucial, since they are the ones who supervise compliance with the rules and the continuity of the system's operation during the day-to-day operation. With **appropriate training** and **motivational factors**, middle managers can be made interested in the rapid implementation of transformations, but at the same time, this must be accompanied by a more decisive **accountability**.

Motivational factors are not only material recognition, but can also appear in the form of professional recognition and career opportunities.

2. The required up-to-dateness of the operation of an organization includes the regular review and updating of the documents of the internal control system. Regular revision is not only important for maintaining regularity, but also necessary to incorporate new challenges and technological developments. In doing so, a specific document must not only comply with the changing legal environment, but also provide a solution to problems when the automatic execution of written rules does not prove to be possible in practice. This is

especially true in complex areas where the practical application of the rules is difficult to follow or where the legal environment changes frequently.

3. It has already been discussed above that the training and motivation of those working in the field of the internal control system and the staff connected with it, as well as holding them accountable, are essential for the proper functioning of the system (e.g. organizational consolidation, transformation, outsourcing of tasks).

In order for other organizations classified in the government sector to be able to operate within a uniform and transparent framework, it seems justified to amend the legislative environment in such a way that the Bkr. 22/2019 for other organizations classified in the government sector (XII. 23.) PM decree also apply, taking special forms of training into account. Through this amendment, it would be possible to increase the ability of individual organizations to adapt to professional and legal requirements. Due to the special forms of training, these may differ from the standard regulations, and thus the uniformity and efficiency of the system could be ensured at the level of legislation.

One of the integral elements of the internal control system is monitoring, which also includes internal control activities. Monitoring not only examines compliance with the rules, but also contributes to the continuous development of the system. Through the feedback of the monitoring results, the internal control system can be continuously improved and thus react to environmental changes in a timely manner. In accordance with the regulations, this activity also covers the adequacy, reliability, and security of the IT systems operating at the given organization, as well as the completeness, regularity, and protection of the data stored in the system. The control of IT systems is one of the most important tasks of modern internal control activities, as digital data management plays an increasingly important role in the operation of organizations.

1. it can be stated that the control of IT systems currently mostly focuses on strict compliance with information security requirements, which is a particularly important area, but in the majority of cases, internal control does not have the appropriate level of expertise and competence. This shortcoming can be particularly worrisome for organizations where data security and integrity are central. Guaranteeing a high level of information security is not only essential for the proper functioning of the internal control system, but also crucial from the point of view of protecting the organization's reputation.
2. the organizations classified in the government sector, since the majority of them operate in the field of research, development, and healthcare, must comply with legal and regulatory requirements related to strict data protection and information security. These requirements are particularly high in areas where data confidentiality and integrity are essential, such as in healthcare or research data management. Official decisions of recent years also highlight

the seriousness of data protection failures, several million fines have also been imposed in Hungary due to data protection incidents (Praudít, 2024). A data protection incident can not only have serious financial consequences, but can also seriously damage the organization's reputation and public trust. A data protection incident can seriously damage the organization's reputation and the public's trust in the institute. As part of the internal control system, the information security specialist can optimize security measures, increase their efficiency, and help identify, evaluate and manage organizational risks, in close cooperation with those working in other areas of the internal control system (e.g.: integrity advisor).

The security measures according to the above greatly improve compliance with the law, therefore I recommend for consideration the inclusion of the persons responsible for information security (informatics) in the training and further training structure of the internal control system, since in this way they can develop a unified and harmonized strategy (e.g. risk management strategy). In this way, IT professionals can better understand the operation of the internal control system and contribute to its development much more actively than at present.

5. NEW SCIENTIFIC RESULTS

1. In my thesis, I was the first to point out that among the decision-making aspects, expediency, efficiency and the importance of socio-cultural aspects show minimal differences according to the scope of activities of the organizations, but I did not find any specific significant differences. On the other hand, the aspects of economy, efficiency, legality and morality are applied by organizations at the same level and in the same way.
2. My research proved that the higher a given actor is in the organizational hierarchy, the less detailed an approach he uses in the evaluation of internal control systems.
3. It was also confirmed that the availability of appropriate documentation is essential for the operation of the internal control system. According to my results, not only the areas of controlling and accounting are closely related to the internal control system, but also legal-administrative and consulting jobs.
4. I found that the guidelines and international recommendations related to the internal control system (theory) and the knowledge and application of the processes related to the internal control system at the organization (practice) are not fully consistent with each other.
5. Information security is a prominent area, IT professionals (persons responsible for information security) can also be considered as elements of the internal control system.

6 . PUBLICATIONS OF THE AUTHOR RELATED TO THE TOPIC OF THE DISSERTATION

Journal articles in foreign languages

1. BOGÁTH E. M. – GÁSPÁR S. – **KEREKES E.**:
Connection Between the Conjunction Cycles and the Economic Crisis of 2008 as Reflected in the Domestic and the Austrian Investment Market In: Economic Working Capital, 2024.
(megjelenés alatt)
2. **KEREKES E.**: *The interpretation of public administration controlling from an economic perspective // A közigazgatási kontrolling gazdasági szempontú értelmezése*
In: ControllerInfo, 2024. (megjelenés alatt)

Journal articles in Hungarian

1. BOGÁTH E. M. – GÁSPÁR S. – **KEREKES E.**:
Connection Between the Conjunction Cycles and the Economic Crisis of 2008 as Reflected in the Domestic and the Austrian Investment Market In: Polgári Szemle, 2024. (megjelenés alatt)
2. **KEREKES E.**: *A belső kontrollrendszer kialakítása a köztulajdonban álló gazdasági társaságoknál*, ControllerInfo 10. 4 pp. 57-61., 5 p. (2022)
3. GÁBOR Á. – GÁL ZS. – **KEREKES, E.**: *Értéktérítés a minőségcontrolling tükrében*, ControllerInfo 8: 2 pp. 32-36., 5 p. (2020)
4. **KEREKES E.**: *Az állam gazdasági szerepe. Gazdasági folyamatok és kontrollingtechnikák alkalmazásának kapcsolata*, Polgári Szemle 15: 1-3 pp. 413-423., 11 p. (2019)
5. MAJOR G. ZS.; **KEREKES ETELKA**: *A Magyar Államkincstár ellenőrzési tevékenységének összefoglalása*, ControllerInfo 7: 2 pp. 9-13., 5 p. (2019)
6. TOLNAY A. – BARTUS I. – **KEREKES E.** – LAJOSA.: *Hatékony ellátási láncmenedzsment a hazai laboratóriumi műszerforgalmazók piacán*, Logisztikai trendek és legjobb gyakorlatok 5: 2 pp. 10-16., 7 p. (2019)
7. ZÉMAN Z. – **KEREKES E.**: *A belső ellenőri jelentések etikus információ tartalma és közzétételének jogi szempontjai // The internal audit reports' ethical information content and their legal aspects of publication*, Jura 2019: 2 pp. 325-331., 7 p. (2019)

Announcements published in a conference publication in a foreign language

1. **KEREKESE.** – BARTUS I. – TOLNAY A: *Outsourcing public services* In: Horváth, Bálint; Földi, Péter; Zsombor, Kápolnai; Antalík, Imrich (szerk.) International Conference of Economics PhD Students and Researchers in Komarno : Conference Proceedings, Komárno, Szlovákia : Janos Selye University (2020) 213 p. pp. 129-139., 11 p.
2. TOLNAY A. – BARTUS I. – **KEREKES E.**– KORIS A.: *The Brand New Idea of Disposable Bioreactor Production in the Hungarian Laboratory Market: A Case Study for Exponential Marketing Strategy* In: Fehér-Polgár, Pál (szerk.) FIKUSZ 2019 – Symposium for Young Researchers Proceedings, Budapest, Magyarország: Óbudai Egyetem, Keleti Károly Gazdasági Kar (2020) 321 p. pp. 265-279., 15 p.
3. TOLNAY A. – BARTUS I. – **KEREKESE.:** *The role of marketing controlling in the organization and in the distribution network* In: Bálint, Horváth; Péter, Földi; Zsombor, Kápolnai; Imrich, Antalík (szerk.) International Conference of Economics PhD Students and Researchers in Komárno : Book of Abstracts Komárno, Szlovákia : Janos Selye University (2019) 33 p. pp. 192-202., 11 p.
4. BOGÁTH E. M. – GÁSPÁR S. – **KEREKESE.:** *The influence of the conjuncture cycles and the economic crisis of 2008 to the national investment markets* In: Dunay, Anna (szerk.) Proceedings of the 9th International Conference on Management: "People, Planet and Profit: Sustainable business and society" : Volume II-Gödöllő, Magyarország : Szent István Egyetemi Kiadó Nonprofit Kft. (2019) 407 p. pp. 95-101., 7
[p.http://doi.org/10.17626/DBEM.ICoM.P02.2019.p065](http://doi.org/10.17626/DBEM.ICoM.P02.2019.p065)

Publications in a foreign language published in an abstract volume

1. BOGÁTH E. M. – GÁSPÁR S. – **KEREKES E.:**
Connection between the conjuncture cycles and the economic crisis of 2008 as reflected in the domestic and the Austrian investment market In: Fodor, Zita (szerk.) Book of Abstracts of the 9th International Conference on Management : "People, Planet and Profit: Sustainable business and society" : 9th ICoM 2019 Gödöllő, Magyarország : Szent István Egyetemi Kiadó (2019) 178 p. pp. 99-99., 1 p.

2. **KEREKES E.**– BARTUS I. – TOLNAY A.: *Outsourcingpublicservices* In: Bálint, Horváth; Péter, Földi; Zsombor, Kápolnai; Imrich, Antalík (szerk.) International Conference of Economics PhD Students and Researchers in Komárno : Book of AbstractsKomárno, Szlovákia : Janos Selye University (2019) 33 p. pp. 20-20., 1 p.
3. TOLNAY A. – BARTUS I. – **KEREKES E.:** *The role of marketing controlling in the organization and in the distribution network* In: Bálint, Horváth; Péter, Földi; Zsombor, Kápolnai; Imrich, Antalík (szerk.) International Conference of Economics PhD Students and Researchers in Komárno : Book of AbstractsKomárno, Szlovákia : Janos Selye University (2019) 33 p. pp. 31-31., 1 p.

Papers published in an abstract volume in Hungarian

1. **KEREKES E.:** *A közpénzekkel való gazdálkodás ellenőrzésének szükségessége és módszerei* In: Németh, Katalin (szerk.) Tavaszi Szél 2019 Konferencia. Nemzetközi Multidiszciplináris Konferencia: Absztraktkötet Budapest, Magyarország: Doktoranduszok Országos Szövetsége (DOSZ) (2019) 742 p. pp. 361-361., 1 p.

Scientific works, theses

1. **KEREKES E.:** *Ellenőrzés az államháztartásban, az önkormányzatok ellenőrzési rendszere.* MA. Budapesti Corvinus Egyetem, Közigazgatástudományi Kar. okleveles közigazgatási menedzser szak
2. **KEREKES E.:** *Dél-pesti uszoda rendszerellenőrzése.* Posztgraduális képzés. Budapesti Corvinus Egyetem, Költségvetési ellenőrzési szak
3. **KEREKES E.:** *Közszolgálati audiovizuális rendszerek.* BA. Budapesti Közgazdaságtudományi és Államigazgatási Egyetem (BKÁE). Államigazgatási Kar. Igazgatásszervező szak

7. BIBLIOGRAPHY

1. LEAVY, P. (2020). Introduction to The Oxford Handbook of Qualitative Research, Second Edition. In P. Leavy (Ed.), *The Oxford Handbook of Qualitative Research* (pp. xxii–20). Oxford University Press.
<https://doi.org/10.1093/oxfordhb/9780190847388.013.9>
2. NGM. (2017). Államháztartási Belső Kontroll Standardok és Gyakorlati Útmutató. Nemzetgazdasági Minisztérium.
https://allamhaztartas.kormany.hu/download/d/48/e1000/%C3%81BKSGYU_k%C3%B6zz%C3%A9t%C3%A9telre_20170918.pdf
3. PETERSON, R. (2000). *Constructing Effective Questionnaires*. SAGE Publications, Inc.
<https://doi.org/10.4135/9781483349022>
4. SEIDMAN I. (2003). *Az interjú, mint kvalitatív kutatási módszer*. Műszaki Könyvkiadó. Elérhető: <https://webshop.kello.hu/az-interju-mint-kvalitativ-kutatasi-modszer>
5. TSE, H. (1998). Internetovályskumná metodológia: Zberdát online a jehodôsledky.