Budapest University of Technology and Economics

Faculty of Economics and Social Sciences

Doctoral School of Business and Management

Audit and fraud risk assessment methods and their implications on audit planning decisions

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Ph.D. theses

by Szívós László

Supervisor: Dr. Laáb Ágnes

TARTALOMJEGYZÉK

1 The context and background of the research

Accounting fraud and fraud related issues continue to be an important discussion among both accounting professionals and academics. Furthermore, despite the issuance of relevant auditing standards, there is a material difference between what the great public and the investors think about the auditor's responsibility in detecting fraud, and what the auditors' feel as their perceived responsibility.

Well-known examples of accounting scandals underpinned the existence of fraud all over the world. Enron, WorldCom, and Lehman Brothers, to mention only the most well-known international cases, are all instances how financial statements can provide distorted information to interested parties on companies' financial position and performance. The question has arisen: to what extent are independent auditors responsible for revealing fraud? Are auditors capable of detecting and preventing such events from occurring at all?

It is worthwhile examining the International Auditing Standards (ISAs) issued by IFAC (International Federation of Accountants) and the Statement on Auditing Standards (SASs) issued by AICPA (American Institute of Certified Public Accountants) from the aspect of how those address the fraud and fraud risk factors that may have implications on financial statements. The scope of this thesis definitely requires the understanding of the auditor's task itself. The ISA 200[1] describes that the overall objective of the auditor is to obtain reasonable assurance about if the financial statements as a whole are free from material misstatement, whether due to fraud or error. Before narrowing the scope for further examination, the term of 'material misstatement' should be delineated. Misstatement, by definition, is the variance between how the amount, classification, and presentation are reported in the financial statements, and how it should have been conforming to the applicable financial reporting framework[2]. Misstatement may arise due to fraud or error, depending on the auditor's

[1] ISA 200 on 'Overall Objectives of the Independent Auditor and the Conduct of an Audit in Accordance with International Standards on Auditing'

[2] AU-C Section 200 on the 'Overall objectives of the independent auditor' requires also the fair presentation of items.

professional judgement whether it is intentional or unintentional. On the other hand, the auditor is not responsible for detecting misstatement that are not material to the financial statements as a whole, when planning and performing the audit engagements. The auditor is not in the position to obtain absolute assurance that the financial statements are free from material misstatement due to fraud or error, as inherent limitations of auditing exist: the nature of financial reporting, the nature of audit procedures, and the requisite that the audit should be performed within a reasonable period of time and at a reasonable cost[3] incurred.

It is beyond dispute that the term of 'fraud' should be determined before going further in the discussion. The definition provided by the international standards is regarded as a base further on.

In ASB's (Auditing Standards Board) view, the definition by ISA 240[4], containing the terms of unjust and illegal advantage, is too broad and may result in additional responsibility for auditors in the U.S., while the interpretation by the SAS is more straightforward leaving less room for subjective assessments (AICPA, 2014).

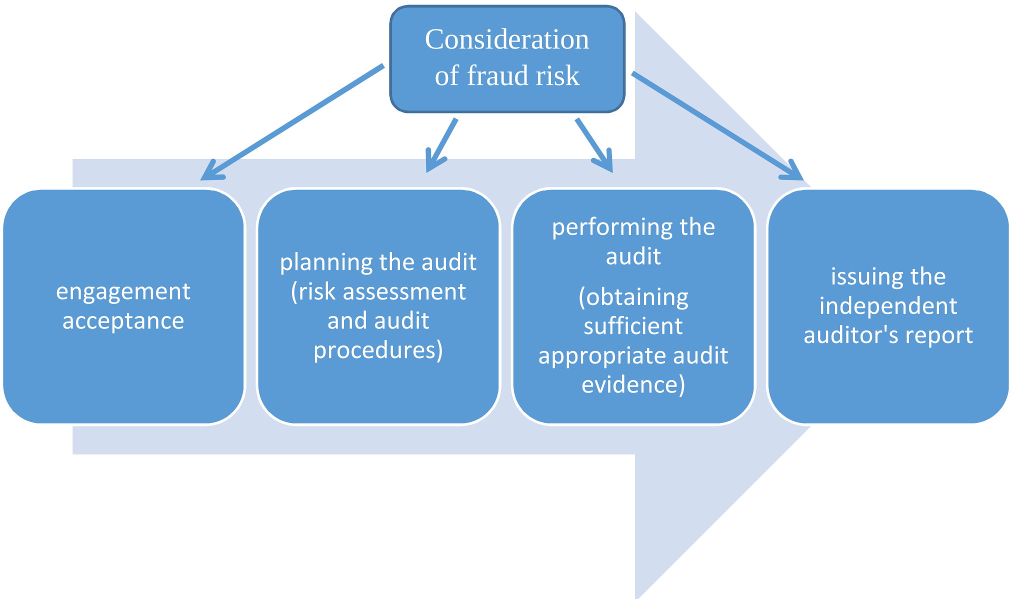
Definition by ISAs	***Definition by SASs***
An intentional act by one or more individuals among management, those charged with governance, employees, or thirds parties, involving the use of deception …	
… to obtain an **unjust or illegal advantage**.	… that **results in a misstatement** in financial statements that are the subjects of an audit.

1. Figure Definition of fraud by international standards (Fortvingler and Szívós, 2014)

The two typical forms of fraud committed in financial reporting that the auditor has to take into account in audits are: fraudulent financial reporting and misappropriation of assets. Fraud itself may contain sophisticated and well-organized schemes to conceal it. Consequently, the

[3] AU-C Section 200 on the 'Overall objectives of the independent auditor' demands a 'balance between benefit and cost'.
[4] ISA 240 on 'The Auditor's Responsibilities Relating To Fraud in an Audit of Financial Statements'

consideration of fraud, while exercising professional scepticism, should be embedded in all phases of the audit engagements.



2. Figure Phases of audit engagements

The ISA 210 on 'Agreeing the terms of audit engagements' requires that the auditor shall obtain an acknowledgement that the management operates an internal control system ensuring that the preparation of financial statements are free from material misstatement due to fraud or error[5].

A critical element of auditing is the planning phase, in which the risk assessment has extreme importance with respect to fraud. An extensive standard (ISA 240 and AU-C Section 240) contains the auditor's responsibilities relating to fraud. It emphasizes that the company itself (those charged with governance and the management) is responsible for the prevention and detection of fraud, while an auditor's task is to obtain reasonable assurance that the financial statements are free from material misstatement whether due to fraud or error. Consequently, the auditor has to identify fraud risk factors: conditions or events that create an incentive or pressure, or give opportunity to commit fraud. The aforementioned fraud standard has relevance

[5] AU-C Section 210 on the 'Terms of engagement' requires, in addition to preparation, the fair presentation.

for ISA 315 (and AU-C Section 315)[6]: it provides guidance how fraud should be taken into account in risk assessment. Moreover, in the process of obtaining sufficient appropriate audit evidence, the consideration of fraud also plays an important role. In responding to the risks of material misstatement due to fraud, the auditor's decision on modifying the extension of testing may necessitate the use of computer-assisted audit techniques (CAATs) in consideration of efficiency. Finally, the auditor shall form an opinion on whether financial statements are prepared in accordance with the applicable financial reporting framework, and the auditor has obtained reasonable assurance about whether the financial statements are free from material misstatement, due to fraud or error.

2 Objectives and theses of the dissertation

Based on the above introduction, the following research objectives were set. The first objective was to explore prior international and national academic researches on the field which can help to identify the current state of fraud related researches. In Chapter 2 the dissertation provides a comprehensive and thorough presentation of the most important research results from abroad and Hungary. The literature review assisted the authors in setting the objectives of the Hungarian specific research which provided the basis for the present thesis. Two fields of research were highlighted: (1) testing different fraud risk assessment methods among Hungarian auditors and (2) a discussion on the impact of IT system applications on the audit risk assessment process.

The second objective of the thesis was to examine the impact of information technology on the procedures conducted by auditors. Pursuing risk assessment and audit procedures in an engagement where information technology is present requires different skilles and knowledge. It is discussed, by reviewing the relevant standards on auditing, how auditors shall take the

6 ISA 315 on 'Identifying and assessing the risks of material misstatement through understanding the entity and its environment', AU-C Section 315 on 'Understanding the entity and its environment and assessing the risks of material misstatement'

features of an IT systems into consideration through the phases of audit. We investigate if there exist specific IT controls on which auditors can rely as effective parts of the company's internal control system. One control procedure, the data consistency check is discussed from the viewpoint of data validation and consistency and its interrelation to and impact on audit risk assessment is highlighted.

Hypothesis 1: The application of data consistency check in an ERP (Enterprise Resource Planning) environment will reduce the control risk during the audit risk assessment and as a consequence auditors shall include less extensive substantive procedures and/or decrease sample size in their audit plan in relation to testing data migration process.

Relevant standards on auditing (ISA 240) describes the responsibility of auditors relating to fraud. ISA 240 says that auditors shall assess the risk of material misstatements due to fraud, but it does not provide a 'ready-to-use' assessment framework, so auditors usually assess fraud risk in one component (traditional method) on an intuitive bases.

Prior international studies experimented the impact of splitting the fraud risk into its three components (Risk of Incentive, Risk of Attitude and Risk of Opportunity) through the fraud triangle (decomposition method).

It was evidenced that the decomposition risk assessment method increased the sensitivity of auditors to fraud clues and could better differentiate between a high and a low fraud risk condition. In Chapter 4 the application of the traditional and the decomposition fraud risk assessment methods was examined with a case study based experiment on a sample of 55 members of the Chamber of Hungarian Auditors. The main aim of this research was to gather evidence on the effectiveness of Hungarian auditors' fraud risk assessment when they apply the two different approaches.

Hypothesis 2: In line with the international research results, with the assistance of the decomposition fraud risk assessment method Hungarian auditors' sensitivity to fraud cues between a high and low fraud risk scenario is significantly greater than using the traditional model.

Based on ISA 330[7] auditors in their audit program plan shall respond to the risk identified in the risk assessment phase. The Hungarian research tested how auditors amend a preliminary audit program and time budget after assessing risk.

Hypothesis 3: In line with the relevant auditing standards, if auditors' assessed fraud risk is higher, they will either modify the preliminary audit plan by including fraud effective tests or they express a higher propensity to consult with an external forensic expert compared to that condition when they assess lower fraud risk.

In a high risk condition where the assessed fraud risk is expected to be greater, auditors might assign more audit hours to perform the fraud effective tests and to extend procedures than previously budgeted. If auditors prepare a more effective audit plan including fraud related tests and procedures, then they will increase the budgeted hours of more experienced staff, so typically managers and partner hours will be enhanced.

Hypothesis 4: When auditors assess a higher fraud risk level, the total budgeted hours for the engagement will be significantly higher compared to the case when auditors assess a lower fraud risk level and the percentage of hours they assign to less experienced audit staff will be significantly higher than in a lower assessed fraud risk condition.

[7] ISA 330 on „The Auditor's responses to assessed risks'

3 Main results of the dissertation

3.1 The impact of information system applications on the audit risk assessment

An entity can gain several benefits from using different IT systems to support its operations, however, besides the several advantages, we also have to highlight the risks stemming from IT applications. Numerous previous research papers (e.g. Wright and Wright 2002, Goldberg and Gowwin 2003, Bae and Ascroft 2003, Kanellou and Spathis 2011) discussed the impact of using information technology applications on the level of audit risk. All the considered relevant publications concluded that the application of ERP (Enterprise Resource Planning) systems in the administration processes of an entity without appropriately embedded internal controls significantly increases the control risk element during an audit risk assessment procedure. The literature review also highlighted that the cost of developing and applying control procedures in the processes is considerably lower than the cost of correcting subsequent errors emerging as a consequence of weak control environment. ISA 315 says that the auditor shall overview and understand the related accounting records, supporting information and specific accounts that are used to initiate, record, process and report transactions in an ERP environment and the control procedures applied by the entity referring to activities and processes pursued in these systems. Messier et al. (2004) surveying the six biggest public accounting firms in Norway, investigated the impact of IT on the audit procedures performed by external auditors. The research also examined whether the origins of misstatements revealed by the audit are different for computerized and non-computerized business processes. They found that control procedures were missing more often in computerized rather than non-computerized business processes and there is an increase in the cause of misstatements resulting from missing and poorly designed controls and audit test.

Some earlier researches indicated (e.g. Hunton et al., 2004) that financial auditors recognize the risk associated with the ERP systems differently than IT auditors. Only certified public accountants were included in the research and the survey found that financial auditors were less concerned than IT auditors with the increased risk of the ERP implementation (e.g. business continuity, database security, application security).

A study conducted by Brazel and Agoglia in 2007 showed that auditors having a higher information system expertise assessed higher control risk in the case of new information system (e.g. ERP) implementation than those not having previous IT experience and when internal control and computer assurance specialist competence was low, financial auditors planned more extensive substantive testing.

ISA 315 says that the auditor should understand the information systems applied by the company and all the related issues relevant to financial reporting. ISA 315 also says that the auditor shall overview the related accounting records, supporting information and specific accounts that are used to initiate, record, process and report transactions. It is also important for the auditor to understand the way the information system captures transactions and events that are significant to the financial statement.

The research conducted by this part of the dissertation focused on data consistency check which is just an example of the many small procedures available in an ERP system. Master Data is of vital importance in an ERP system as all the other transactional data is based on it and also uses them. Through a practical example it is demonstrated that control activities exist that can be automated during a data migration process. These control activities not just decrease the opportunity for human manipulation but they also exert a favourable influence on the level of control risk in an audit risk assessment process and as a consequence support the work of an auditor. Data consistency check (ConsistencyCheck) is a tool available in one of the most well-known ERP system (Microsoft Dynamics AX) on the market and applicable to examine the consistency and validity of transactional data.

The ConsistecyCheck framework is the core of the Dynamics AX data migration process. Similar control procedures do also exist in other ERP systems that are only optional but not mandatory after a data migration process if there is danger that master data is either inconsistent or corrupt.

All of this has a direct impact on the figures included in the financial statements. As a consequence of this an auditor shall pay a special emphasis to the accuracy of master and transactional data through a data migration process. The practical example demonstrated in the dissertation underpinned that information technology systems, such as an ERP, provide several possibilities to embed automated control procedures in information systems in order to support the validity and accuracy of master and transactional data.

Data consistency check is an information technology application control that contributes to the decrease of the control risk during an audit risk assessment procedure and auditors can also rely on this through their procedures. As a consequence of it auditors shall conduct less substantive procedures with lower sample sizes and shorter audit procedure as a whole. It is also important to mention, that the crucial condition for testing IT controls successfully is that an auditor shall have the required knowledge on the field of information technology or in absence of such knowledge the auditor shall involve IT experts in the risk assessment process.

With all of the above discusssion one can conclude that Hypothesis 1 is supported.

Thesis 1: The application of data consistency check in an ERP (Enterprise Resource Planning) environment will reduce the control risk during the audit risk assessment and as a consequence auditors shall include less extensive substantive procedures and/or decrease sample size in their audit plan in relation to testing data migration process. (Szívós and Orosz, 2014)

3.2 Different approaches to fraud risk assessment and their impacts on audit planning decisions

As it was presented in the introduction ISA 240 'The auditor's responsibility relating to fraud in an audit of financial statement' besides introducing the theoretical framework, it also contains concrete examples for fraud risk factors, for condition indicating fraud and for the audit procedure addressing fraud risk.

The conducted research focuses on the planning stage of an audit engagement with a special emphasis on risk assessment and on the planning of audit procedures. The case study based experiment investigated how the application of two different fraud risk assessment approach (traditional and decomposition) exerted an influence on the level of fraud risk assessed in different risk scenarios. The research also tested the impact of assessed fraud risk on the audit procedure conducted by auditors. How do auditors modify their audit plan if they assess a higher fraud risk?

With the application of the traditional method auditors first assess the three components of the audit risk, the inherent risk, the control risk and the detection risk then assess the risk of fraud separately in one component. In the case of the decomposition method the risk of fraud is assessed with the help of the fraud triangle broken down into its components (opportunity, motivation/pressure, attitude).

The effectiveness of different fraud risk assessment methods have already been investigated and analysed by several international studies. The international academic literature discusses fraud risk assessment methods frequently and widely. Several prior international studies (Zimbelman 1997, Knapp and Knapp 2001, Asare and Wright 2004) have reported that assessing fraud risk separately from the audit risk improves the sensitivity of auditors to fraud clues. The effectiveness of fraud risk assessment can significantly be improved by providing check lists to auditors during the risk assessment process. Beyond the previously discussed questions several researchers (Wilks and Zimbelman 2004, Favere-Merchesi 2013, Mock 2011) investigated the impact of using the fraud triangle approach, which was developed and first presented by Donald Cressey, on the effectiveness of fraud risk assessment. All the researches evidenced that the decomposition fraud risk assessment approach helps auditors to accurately identify high fraud risk scenarios. While other studies (e.g. Asare and Wright 2004, Hammersley et el. 2011) examined if auditors can give appropriate responses to the assessed fraud risk in their audit program. The studies provided evidence that the decomposition fraud risk assessment method can be applied effectively to reveal fraud risk, although auditors are unable to give appropriate responses to the assessed risk. Research results show that the audit program constructed in the case of a high assessed fraud risk is lower quality and shows lower efficiency.

Although there have been researches conducted on audit risk assessment and in relation to accounting fraud in Hungary, but the progress is far from complete and advance. It is well worth mentioning Lukács (1998a, 1998b, 2007) and the doctoral dissertation of Szász Erzsébe (2013) among the most vital and fundamental studies in Hungary. Bélyácz (2010 an 2011) published theoretical classifications and discussions on the field of risk and uncertainty which are also very significant works.

The two most important Hungarian studies that are relevant to the current research are the survey conducted by Lukács (2008) and the study prepared by Mohl (2012, 2013). Lukács (2008) tried to acquire information via a survey on the risk assessment practice of Hungarian auditors. In 2008 the major findings of the research were that only 60 % percent of the auditors conduct the audit risk assessment regularly as part of the audit planning and 22 % only if it is necessary at all cost, while 11.5 % never pursues the risk assessment. We have to note that the conditions described by Lukács (2008) must have changed to favourable direction in the last couple of years as the consequence of the more and more rigorous quality management system applied by the Hungarian Chamber of Auditors.

Mohl (2013a) in his research also examined the risk assessment methods applied by auditors. The survey revealed that auditors working individually or in smaller audit firms conduct audit risk assessment mainly on an intuitive basis instead of following previously stated risk assessment framework or policies. It was also identified that auditors present the risk level mainly by using qualitative scales (high, medium, low) instead of quantifying it. During their risk assessment auditors pursue a transaction based approach instead of the business mode approach.

3.2.1 Research methodology

The research is based on a local adoption of a case study that has been already used previously by several international researches. The practical case study contained fundamental information about the audit client, so the participant of the study received information on the financial position (Balance Sheet), on the income (Income Statement), on the main financial ratios and indicators, on the industrial conditions, on the marketing strategy applied by the entity and on the outcomes of the previous years' financial audit in relation to testing the control environment.

From the aspect of the fraud risk level, two case study versions were developed, a high risk scenario and a low risk scenario, which differed from each other in the content and scope of the available information. A separate manipulation check proved that the participant encoded correctly the signal of fraud embedded in the case scenarios and recognized the risk factors. All of this evidenced that the sample is suitable for analysis and for making conclusions based on it.

From the viewpoint of the applicable fraud risk assessment method one half of the participants were asked to use the traditional fraud risk assessment method, while the other half of the auditors were asked to use the decomposition fraud risk assessment method.

As a result of the above described conditions the research examined the auditors' fraud risk assessment process and their responses to the assessed risks through two different case versions (low and high risk) and with the application of two different risk assessment methods (traditional and decomposition). The participants of the study received randomly one version if the 2 x 2 panel (risk version and risk assessment method) through an on-line platform (Lime Survey).

After distributing randomly the case version and the risk assessment method respondents were asked to conduct audit and fraud risk assessment. As a second step the study investigated how participants modify the preliminary audit plan referring to the audit of the revenue cycle from the aspect of the previously assessed fraud risk. Respondents were also asked to modify the preliminary time budget of the audit engagement if they felt it necessary and decide if they wish to involve fraud expert into the work.

The final part of the survey gathered information on the demographical characteristic of the participants (practical experience, educational background, knowledge on the fraud triangle.

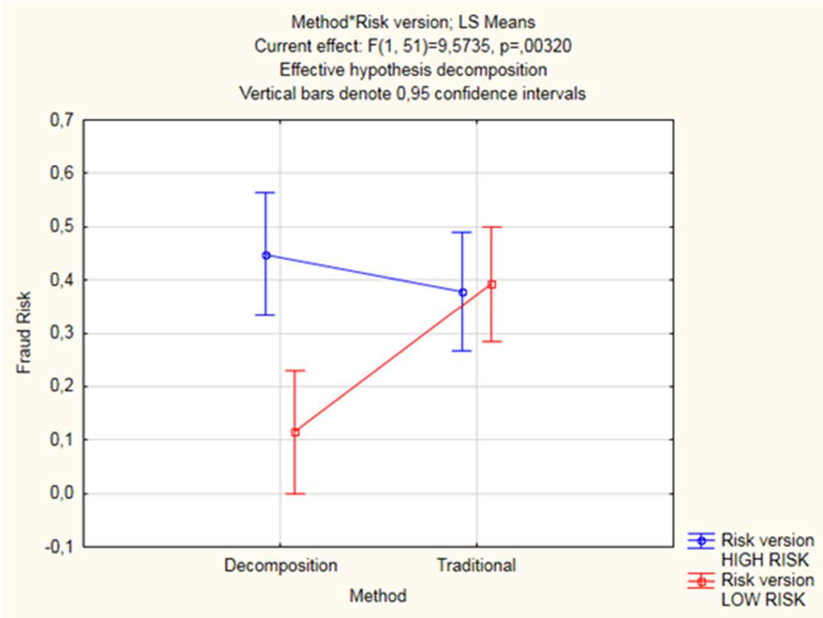
The case study based experiment targeted the registered members of the Hungarian Chamber of Auditors. Respondents participated on a voluntary bases to the case study and the related on-line questionnaire sent to them through e-mail. The Chamber of Hungarian Auditors provided access to their member without which this research could not come true.

In total 61 responds arrived back electronically, out of which 6 participant were excluded from the sample as they either failed on the manipulation check or gave incomplete answer. Finally 55 complete responses were included into the analysis.

3.2.2 Results of the research and theses

After processing the answers given by auditors it was evidenced that the decomposition fraud assessment method better improves the sensitivity of auditors to fraud clues in different risk settings than the traditional fraud risk assessment method. Performing the ANOVA analysis to understand the impact of the case version (high vs. low risk scenario) and the applied risk assessment method (traditional vs. decomposition) on the level of fraud risk, we found that there is a significant main effect for risk version (p=0.006217) and for the interaction between risk version and risk assessment approach (p=0.00321). Single significant main effect could not be identified for the chosen risk assessment method (p=0.069598), however, it is demonstrated in Figure 2 that with the application of the decomposition risk assessment method auditors could better differentiate between the high (mean: 0.488) and low (mean: 0.115) risk scenarios than applying the traditional one. We can conclude that the decomposition method of fraud risk assessment drew the attention of auditors to fraud cues more successfully than the traditional approach, thus enhanced the sensitivity to fraud risk. While in case of participants using the traditional approach, the lack of sensitivity to fraud risk can be identified. **With all of the previous hypothesis 2 can be supported and justified.**

It was an interesting observation that with the traditional approach both in the case of the high and the low risk scenario the tested auditors assessed a relatively high fraud risk (high risk scenario: mean of 0.392; low risk scenario: mean of 0.379), while among those auditors who used the decomposition risk assessment method a significant fall in the assessed risk for the low risk scenario (mean: 0.115) and a slighter increase in the assessed risk for the high risk scenario (0.488) was observed. This finding is in line with prior international research conducted by Wilks and Zimbelman (2004).

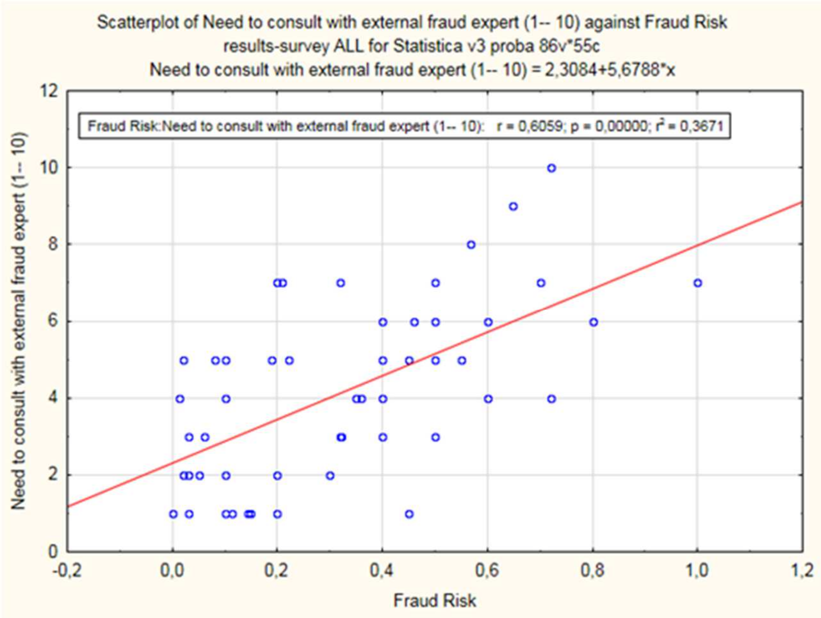


1. ábra Assessed fraud risk

With all of the previous hypothesis 2 can be supported and justified.

Thesis 2: In line with the international research results, with the assistance of the decomposition fraud risk assessment method Hungarian auditors' sensitivity to fraud cues between a high and low fraud risk scenario is significantly greater than using the traditional audit risk model. (Fortvingler and Szívós, 2016)

A medium strong relationship (r = 0.6059, r2 = 0.3671) can be identified between the fraud risk assessed by auditors and the need they felt to consult with external forensic experts. This means that the higher the fraud risk assessed by the auditors is, the higher need they feel to consult with an expert. As it was previously evidenced, the level of fraud risk is determined primarily by the risk version and the interaction between the risk version and the applied risk assessment method. We can assume that these two factors also have a significant main effect on auditors' intention to consult with experts.



2. ábra The relationship between the Assessed Fraud Risk and the Need to Consult with external fraud expert

The ANOVA analysis shows that separately neither the risk version (p = 0.056512) nor the applied method (traditional vs. decomposition) (p = 0.836907) has significant main effect on the auditor's propensity to consult with fraud experts, however their interaction is significant (p = 0.000750). This means that by applying the decomposition fraud risk assessment method, auditors can more effectively differentiate between the high and the low fraud risk setting, and as a consequence, they can better adjust their consideration whether to consult with external fraud expert. The highest need to consult with external forensic experts (mean 5.77, SD 2.28) was revealed in the high risk setting with the decomposition approach.

In order to test the auditors' responses to a higher assessed fraud risk level from the standpoint of the audit procedures, the modified audit plan responses received from participants were split into two categories. As standard distribution for the assessed fraud risk cases could not be observed from the sample, the separation between low and high fraud risk responses was performed, which shows a well-identifiable gap in the responses at 0.28 assessed level of fraud risk. Examining the audit planning decisions one can find that auditors primarily chose either to perform the standard procedure or they increase sample size. Performing the Chi-Square test for the two most commonly indicated answers we can see that the fraud risk level has significant impact on neither of the most frequently given.

Thus, the above discussions are proving that Hypothesis 3 was not entirely correct. If auditors' assessed fraud risk is higher, they do not modify significantly the preliminary audit plan by including fraud effective tests compared to that condition when they assess lower fraud risk. Instead, in a high risk condition Hungarian auditors typically increase sample size and have a higher propensity to consult with an external forensic expert.

For testing Hypothesis 4, first a Sign test for median was performed which indicates that auditors prepared a significantly different time budget compared to the preliminary time budget given. The Mann-Whitney U test performed indicates that the fraud risk category ("high" and "low") has a significant main effect both on the total hours budgeted ($p = 0.015633$) and on the manager hours budgeted ($p = 0.003273$). We can conclude that auditors not only give a significantly different total hours staffing compared to the preliminary budget but they also most typically increase manager hours, **thus Hypothesis 4 is supported**.

Tézis 4: Abban az esetben, amikor a könyvvizsgálók által becsült csalási kockázati szint magasabb a könyvvizsgálati megbízásra nagyobb teljes időkeretet terveznek, mint alacsonyabb kockázati szint becslése esetén. Ezzel együtt a tapasztaltabb munkatársakhoz tervezett óraszám aránya a teljes időkeretben magasabb lesz, mint az alacsonyabb csalási kockázati szintű esetben. (Fortvingler and Szívós, 2016)

However, consolidating the results of the time budget and the audit planning tests it turns out that auditors, as a response to higher assessed fraud risk, routinely increase sample size or perform standard procedure for which they typically budget higher manager hours. Using more experienced staff for doing more from the same procedures is not effective, and could make an audit engagement excessively expensive.

4 The structure of the dissertation

The dissertation is broken down into **five main parts**, which are the following:

In the **first main part** of the current thesis work the practical and legislative background of the research is introduced. It is also explained and demonstrated why the designated research field is an exciting and current issue for academic researchers. The national and international accounting scandals of the last couple of decades have established an indisputable ground for academic discussions and provide well-founded bases for future researches. The hypotheses of the dissertation are also introduced in the first part.

The **second quite expansive part** of the dissertation aims at providing a comprehensive but still concise summary of the national and international academic research results and to reveal the fields which are suitable for future research directions. The field of accounting fraud, though seems to be very exciting for many researchers, as a consequence of the characteristics of fraud is a field difficult to research. Fraud is usually committed with intentional act, where perpetrators do everything to conceal their act. As we have information only on the revealed fraud cases, thus we cannot gain an objective, measurable and complete understanding about the types of the fraudulent acts and about the psychological background of the acts. The objective of this part of the dissertation is to identify the areas where objective and identifiable researches can be conducted.

The **third part of the dissertation** aims at providing a full picture and identify relationship between the application of information technology systems and the risk assessment process of auditors through reviewing the relevant academic literature, the referring standards on auditing and through analysing a control procedure (data consistency check) in practice. The chapter makes conclusions how the test of an IT system might affect the audit planning decisions of auditors.

The **fourth part** of the dissertation, by further analyzing the risk assessment process of auditors, tries to identify which fraud risk assessment methodology (traditional or decomposition) better helps auditors in identifying fraud clues and to reveal the responses given by auditors to assessed fraud risk. All the set objectives of this part of the research are achieved by conducting an on-line case study experiment with the involvement of auditors. This part of the research focuses on the effectiveness of different fraud risk assessment methods and on the responses given by auditors to the assessed fraud risk.

In **the fifth (final) part** of the dissertation the main conclusions and theses of the dissertation are presented in a structured way with special highlight on the new or newsy results of the work.

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