THE PERCEPTION OF EMPLOYEES IN PUBLIC INSTITUTIONS ON INTERNAL MANAGERIAL CONTROL AS A TOOL IN PREVENTING AND COMBATING THE FRAUD PHENOMENON

Daniel CONSTANTIN ^{a}, Marius Silviu CULEA ^b, Nicoleta CRISTACHE ^c*

^{a, b, c} "Dunărea de Jos" University of Galați, Romania

ABSTRACT

From the broad typology of fraud, there is a certain type of fraud that deserves special attention, namely Robin Hood fraud. Some of the solutions proposed in the literature for its prevention and detection are those that refer to supervision and reporting mechanisms, both being ways to close the opportunities specific to internal managerial control. However, these concepts have a common element, namely perception. If in these cases we talk about employees' perception of what is considered to be ethical, in this approach we aim to show what is the perception of employees and the general public on internal managerial control and whether their perspective corresponds to the mission of this tool to eliminate opportunities for fraud.

KEYWORDS: *fraud, internal control, management, perception.*

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1. INTRODUCTION

The phenomenon of fraud is as old as civilization itself. In the Constitution of Athens, Aristotle mentions this phenomenon from the sixth century BC (before Solon promoted debt relief measures, several members of the upper class of society found out about this intention and borrowed money to buy a large area of land, so that after debt cancellation they became rich). Greek sculptors embedded the signatures of Phidias and Praxiteles in their works prepared for export to Roman collectors. In turn, fraud generates anti-fraud. There are opinions that forensic accounting is one of the oldest professions and dates back to the time of the Egyptians. The king's "eyes and ears" was a person who essentially served as a forensic accountant for Pharaoh, paying attention to inventories of grain, gold, and other goods. The person had to be trustworthy, responsible and able to manage such an influential position (Singleton, 2010).

Modern frauds include pyramid schemes (Ponzi schemes), securities fraud, accounting fraud, health and auto insurance fraud, sophisticated art forgeries and the "Nigerian scam" to name just a few.

First of all, in order to be able to prevent fraud, we need to understand its components, the causes that lead to the appearance of this plague and, above all, to establish the line between fraud and error.

2. MANUSCRIPT

2.1 Attributes of fraud - general considerations

In order to better understand the concept of fraud, but also the ways of prevention and detection, we should first define what are the attributes of fraud, ie the essential elements that underlie this phenomenon.

* Corresponding author. E-mail address: dan.constantin@ugal.ro

As presented in the literature by various authors, fraud is both an illegal act and a crime. It is an intentional, deliberate act characterized mainly by deception, concealment, breach of trust or the use of dishonest means by which the victim is deprived of his possession, causing material or other harm to the victim. The central theme behind all types and modes of fraud is intention, motive and purpose (Onwubiko, 2020). These attributes apply to all types of fraud, regardless of domain, jurisdiction or country.

Figure 1. Attributes of fraud

Source: authors' processing after Onwubiko (2020)

1) Any fraud contains the *intentional component*. Fraud is intentional, often involving deception. Intention is the deliberate act of committing fraud or deceiving a person or entity. Thus, fraud is the act committed deliberately, intentionally or knowingly for unjustified financial gain or personal reward.

In conclusion, lack of intention leads to the separation between fraud and error. For example, filling in unreal data in the form for obtaining a loan from a financial institution is a fraud, because it is a deliberate, malicious act. Instead, forgetting to quote a source in an article by a first-year student is a mistake. Although this leads to plagiarism, which is an academic fraud, the student's intention was not deliberate because the reason was not to deceive. It is simply an accidental mistake due to lack of competence and qualification.

2) Any fraud has a *reason*. The motivation derives from the financial gains or non-financial rewards (personal benefits) that they hope to obtain. The financial reasons are those attributed to money or financial rewards. Non-financial gains (those that do not bring immediate financial gain) include the promise of a higher position in an organization, undeserved promotion, undue indemnities, valuable gifts and so on.

3) Any fraud has a *purpose*. The main objective of fraud is deception, concealment, evasion. Deception is the act of deceiving: to falsify, not to perform an activity, to deceive, to make someone accept as true what is false or invalid (Thomas et al., 2004). It is obvious that deception contains the malicious component because the goal is to deceive a victim in order to gain an unfair and unjustified advantage.

2.2 Robin Hood fraud

In the case of Robin Hood fraud, when employees work in teams, a certain sense of closeness is created between team members which can lead to less honesty towards the organization and more empathy towards team members. It is considered that the chances of fraud for altruistic reasons increase if in a team where a warm atmosphere of care and emotional involvement of members has

been created, and the possibility of fraud arises if one of the members needs emotional support (or maybe even financial) of the others.

Thus, the Robin Hood effect is manifested in those cases where economic inequity exists, and the team members agree to act to eradicate it, restoring balance, the reasons for the members' action being altruistic. The downside of this effect is that it can be more streamlined, more easily explained, more morally justified by those who contribute to fraud. Studies show that even when we work with an unknown, new partner outside the team, who for various reasons could benefit from possible fraud, we are more likely to cheat than when we work individually without the support of a team. At the same time, in situations where only the team partner needs support, it is even easier for us to rationalize our actions, because such behavior from a psychological point of view could be called 100% altruistic.

Given the magnitude of projects carried out in large entities and the involvement of several departments to implement a project, it is not possible for employees to work alone, each on his own project, without support and assistance from other employees.

However, what can be done is to use a supervisor for teams that would have the opportunity to cheat and especially in which there is an atmosphere of loyalty and friendship. But there is a need for a supervisor who interacts as little as possible with team members directly and who does not introduce elements of close interaction with the people he will monitor. He should interact as little as possible with team members so as not to decrease team motivation.

2.3 Implications of internal managerial control - warning system

In addition to the supervision component, the literature proposes another valid solution for the various cases of fraud, namely the warning system.

The alert system is a tool for preventing and identifying fraud in an organization or company. For this system to work, an active role of employees is needed. This is because ordinary people cannot be whistleblowers, only people within the organization can do this.

However, there are opinions (Lee & Fargher, 2018) according to which there are two types of denunciation, namely internal denunciation and external denunciation, the denouncer may be an employee or interested parties who become aware of some wrongdoing and who reports the action to the company's management without fear of reprisals.

Although reporting is a powerful tool for fraud prevention and detection, it is somewhat underused due to fear of retaliation, legal liability and cultural opposition. These barriers should be removed to use this tool as a positive means of improving transparency in organizations.

In general, reporting can be seen as an act of exposure or disclosure of misconduct.

There are several elements for alert systems to work effectively, the most important being anonymity, independence, access and follow-up.

Particular attention should be paid to perception. Perception is a process of giving meaning to the environment by individuals. According to Griffin and Ebert (2004), ethical behavior is a behavior that conforms to generally accepted social norms regarding correct actions. People who believe that ethical behavior ensures positive results have been shown to be positively and significantly linked to the intention to report.

There are many factors that affect a person to decide to become a whistleblower, such as internal factors and external factors. Through the individual factor itself it can be seen that a person's life also influences his perspective in seeing the environment and responding to the problems that arise. Thus, a person's perception becomes an important component that must be taken into account in support of the denunciation. Although whistleblowers have helped reduce fraud, serious organizational mistakes seem to be growing, not diminishing. In some cases, whistleblowers are ostracized and isolated to identify wrongdoing.

However, organizations need to develop an ethical corporate culture, in which employees become "ethical partners" and do the right thing, not because they need to, but because they want to

(Farooqi et al., 2017). On the contrary, Paeth (2013) considers that the moral complexity of reporting in the context of corruption in organizations must be taken into account in other respects. Researchers have yet to find an answer as to why some people are willing to report wrongdoing and others decide to stay away or silent.

2.4 Analysis of the perception of employees of public entities on the role of internal managerial control in fraud prevention

This quantitative research aims to highlight how internal managerial control is perceived at the level of public entities as a tool to help prevent and identify fraud. Moreover, it is desired to find out the opinion of the respondents regarding the reduction of the risk of error and fraud once this system is fully implemented and functional.

The study is based on a conceptual model that aims to test several hypotheses:

1. A functional internal control has a positive impact on the implementation of operational procedures for all activities carried out in an institution;
2. A functional internal control has a positive impact on the detailed coverage with procedures of each activity carried out in an institution;
3. A functional internal control has a positive impact on the rigor, imperative and inflexibility of the implemented procedures;
4. A functional internal control has a positive impact on compliance with the supervisory procedure in all situations where this is necessary;
5. A functional internal control has a positive impact on the regular internal verification of the activities carried out;
6. A functional internal control has a positive impact on the irregularities found by the external control bodies;
7. A functional internal control has a positive impact on the occurrence of circumstances indicating the occurrence of fraud.

Figure 2. Hypotheses tested in research
 Source: authors' processing

In order to identify the way in which public entities perceive the design and implementation of the internal management control system and its sufficiency and adequacy in detecting and preventing various irregularities, we prepared and distributed a questionnaire to all public entities in Calarasi County, regardless of their subordination, local or central. The questionnaire, based on Lickert's scale (5 levels of answer, ranging from total disagreement to total agreement). It was addressed to all administrative units in the county (2 municipalities, 3 cities, 50 communes), their tertiary authorizing officers, as well as to entities subordinated to the central public administration.

The questionnaire was answered by 158 employees from all levels of the institutions (employees with management or executive function, employees with accounting / control / other tasks).

We used in this research the SPSS (Statistical Package for the Social Sciences) software provided by IBM as a method for analyzing quantitative data. This statistical software allows the rapid extraction of information from the analyzed data. Advanced statistical procedures help ensure high accuracy and quality decisions. We completed the quantitative analysis with a qualitative method in the second part of this research.

2.4.1 Hypothesis testing and statistical analysis

Before testing the hypotheses, the analysis of the internal consistency of the analyzed data (how closely these data sets are related as a group) was analyzed using the Cronbach's Alpha indicator. Given that the value obtained (0.876) is higher than the coefficient of 0.7 considered acceptable in most research, this shows a high internal consistency (correlation) of the research tool.

Table 1. Cronbach's Alpha indicator

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.876	.874	9

Source: authors' processing after SPSS

To verify the sampling, the following were performed:

- Kaiser-Meyer-Olkin (KMO) test of adequacy of sampling, where a value of 0.880 (close to 1) was obtained, which indicates that factor analysis may be useful;
- Bartlett sphericity test – for factor analysis to work, there must be some kind of relationship between variables. This test shows whether factor analysis is appropriate for a particular data set. Factor analysis can only be considered suitable for a series of data if the value of significance is less than 0.05. As the significance value for the data presented tends to 0, factor analysis is appropriate for these data:

Table 2. KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.880
Bartlett's Test of Sphericity	Approx. Chi-Square	809,851
	df	36
	Sig.	<,001

Source: authors' processing after SPSS

Due to the fact that the current data set satisfies both the KMO test and the Bartlett test, the factor analysis is suitable for this data set.

The statistical analysis of the data set was performed, resulting in the following:

Table 3. Chi-Square Tests

Hypotheses	Chi-Square Tests			
	Indicator	Value	Degrees of freedom	Asymptotic Significance (2-sided)
Hypothesis 1	Pearson Chi-Square	145,654 ^a	16	<,001
	Likelihood Ratio	89,120	16	<,001
	Linear-by-Linear Association	74,713	1	<,001
	N of Valid Cases	158		
	a. 19 cells (76,0%) have expected count less than 5. The minimum expected count is ,13.			
Hypothesis 2	Pearson Chi-Square	144,302 ^a	16	<,001
	Likelihood Ratio	87,071	16	<,001
	Linear-by-Linear Association	67,494	1	<,001
	N of Valid Cases	158		
	a. 18 cells (72,0%) have expected count less than 5. The minimum expected count is ,13.			
Hypothesis 3	Pearson Chi-Square	117,989 ^a	16	<,001
	Likelihood Ratio	71,276	16	<,001
	Linear-by-Linear Association	48,258	1	<,001
	N of Valid Cases	158		
	a. 18 cells (72,0%) have expected count less than 5. The minimum expected count is ,13.			
Hypothesis 4	Pearson Chi-Square	87,958 ^a	16	<,001
	Likelihood Ratio	73,844	16	<,001
	Linear-by-Linear Association	53,730	1	<,001
	N of Valid Cases	158		
	a. 17 cells (68,0%) have expected count less than 5. The minimum expected count is ,28.			
Hypothesis 5	Pearson Chi-Square	111,050 ^a	16	<,001
	Likelihood Ratio	88,782	16	<,001
	Linear-by-Linear Association	67,329	1	<,001
	N of Valid Cases	158		
	a. 18 cells (72,0%) have expected count less than 5. The minimum expected count is ,22.			
Hypothesis 6	Pearson Chi-Square	30,896 ^a	12	,002
	Likelihood Ratio	27,361	12	,007
	Linear-by-Linear Association	11,136	1	<,001
	N of Valid Cases	158		
	a. 12 cells (60,0%) have expected count less than 5. The minimum expected count is ,63.			
Hypothesis 7	Pearson Chi-Square	15,631 ^a	12	,209
	Likelihood Ratio	12,760	12	,387
	Linear-by-Linear Association	6,529	1	,011
	N of Valid Cases	158		
	a. 14 cells (70,0%) have expected count less than 5. The minimum expected count is ,25.			

Source: authors' processing after SPSS

- for hypotheses 1 - 6: the asymptotic significance coefficient is close to zero (0.001), lower than the allowed significance threshold of 0.05 and the value of the Pearson Chi Square indicator is higher than the tabular value in the context of 16 (12 in case of hypothesis 6) degrees of freedom, hypotheses 1 - 6 are validated;
- for hypothesis 7: the asymptotic significance coefficient having the value of 0.209, higher than the allowed significance threshold of 0.05 and because the value of the Pearson Chi Square indicator (15,631) is lower than the tabular value in the context of 12 degrees of freedom (21.03), hypothesis 7 is not validated, in conclusion, in the opinion of the respondents a functional internal control does not have a positive impact on the occurrence of circumstances indicating the occurrence of fraud.

Table 4. Analysis of the correlation between variables

Hypotheses	Symmetric Measures					
			Value	Asymptotic Standard Error ^a	Approximate T ^b	Approximate Significance
Hypothesis 1	Interval by Interval	Pearson's R	,690	,067	11,901	<,001 ^c
	Ordinal by Ordinal	Spearman Correlation	,536	,068	7,921	<,001 ^c
	N of Valid Cases		158			
Hypothesis 2	Interval by Interval	Pearson's R	,656	,074	10,846	<,001 ^c
	Ordinal by Ordinal	Spearman Correlation	,533	,067	7,874	<,001 ^c
	N of Valid Cases		158			
Hypothesis 3	Interval by Interval	Pearson's R	,554	,081	8,321	<,001 ^c
	Ordinal by Ordinal	Spearman Correlation	,478	,071	6,803	<,001 ^c
	N of Valid Cases		158			
Hypothesis 4	Interval by Interval	Pearson's R	,585	,063	9,009	<,001 ^c
	Ordinal by Ordinal	Spearman Correlation	,570	,058	8,667	<,001 ^c
	N of Valid Cases		158			
Hypothesis 5	Interval by Interval	Pearson's R	,655	,060	10,823	<,001 ^c
	Ordinal by Ordinal	Spearman Correlation	,636	,057	10,281	<,001 ^c
	N of Valid Cases		158			
Hypothesis 6	Interval by Interval	Pearson's R	,266	,074	3,451	<,001 ^c
	Ordinal by Ordinal	Spearman Correlation	,293	,077	3,832	<,001 ^c
	N of Valid Cases		158			
Hypothesis 7	Interval by Interval	Pearson's R	,204	,098	2,602	,010 ^c
	Ordinal by Ordinal	Spearman Correlation	,166	,086	2,107	,037 ^c
	N of Valid Cases		158			
	a. Not assuming the null hypothesis.					
	b. Using the asymptotic standard error assuming the null hypothesis.					
	c. Based on normal approximation.					

Source: authors' processing after SPSS

- the value of the Spearman correlation coefficient having values between 0.636 and 0.166 shows a positive correlation between the variables analyzed by hypotheses 1 - 7.

Regression analysis:

Table 5. Regression analysis for hypothesis 1

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	,690 ^a	,476	,473	,708		
ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	70,915	1	70,915	141,642	<,001 ^b
	Residual	78,104	156	,501		
	Total	149,019	157			
Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1,522	,240		6,344	<,001
	Internal control is functional	,639	,054	,690	11,901	<,001
a. Dependent Variable: implementation of operational procedures for all activities carried out in an institution						
b. Predictors: (Constant), Internal control is functional						

Source: authors' processing after SPSS

Table 6. Regression analysis for hypothesis 2

Model Summary							
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate			
1	,656 ^a	,430	,426	,738			
ANOVA ^a							
Model		Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	64,020	1	64,020	117,636	<,001 ^b	
	Residual	84,898	156	,544			
	Total	148,918	157				
Coefficients ^a							
Model			Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
1	(Constant)		1,559	,250		6,234	<,001
	Internal control is functional		,607	,056	,656	10,846	<,001
a. Dependent Variable: detailed coverage with procedures of each activity carried out in an institution							
b. Predictors: (Constant), Internal control is functional							

Source: authors' processing after SPSS

Table 7. Regression analysis for hypothesis 3

Model Summary							
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate			
1	,554 ^a	,307	,303	,847			
ANOVA ^a							
Model		Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	49,688	1	49,688	69,231	<,001 ^b	
	Residual	111,964	156	,718			
	Total	161,652	157				
Coefficients ^a							
Model			Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
1	(Constant)		1,531	,287		5,331	<,001
	Internal control is functional		,535	,064	,554	8,321	<,001
a. Dependent Variable: rigor, imperative and inflexibility of the implemented procedures							
b. Predictors: (Constant). Internal control is functional							

Source: authors' processing after SPSS

Table 8. Regression analysis for hypothesis 4

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	,585 ^a	,342	,338	,965		
ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	75,536	1	75,536	81,166	<,001 ^b
	Residual	145,179	156	,931		
	Total	220,715	157			
Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1,015	,327		3,104	,002
	Internal control is functional	,660	,073	,585	9,009	<,001

a. Dependent Variable: compliance with the supervisory procedure in all situations where this is necessary

b. Predictors: (Constant), Internal control is functional

Source: authors' processing after SPSS

Table 9. Regression analysis for hypothesis 5

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	,554 ^a	,307	,303	,932		
ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	60,084	1	60,084	69,104	<,001 ^b
	Residual	135,637	156	,869		
	Total	195,722	157			
Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1,610	,316		5,092	<,001
	Internal control is functional	,588	,071	,554	8,313	<,001
a. Dependent Variable: regular internal verification of the activities carried out						
b. Predictors: (Constant). Internal control is functional.						

Source: authors' processing after SPSS

Table 10. Regression analysis for hypothesis 6

Model Summary							
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate			
1	,266 ^a	,071	,065	1,066			
ANOVA ^a							
Model		Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	13,544	1	13,544	11,910	<,001 ^b	
	Residual	177,393	156	1,137			
	Total	190,937	157				
Coefficients ^a							
Model			Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
1	(Constant)		2,926	,362		8,094	<,001
	Internal control is functional		,279	,081	,266	3,451	<,001
a. Dependent Variable: irregularities found by the external control bodies							
b. Predictors: (Constant). Internal control is functional.							

Source: authors' processing after SPSS

Table 11. Regression analysis for hypothesis 7

Model Summary							
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate			
1	,204 ^a	,042	,035	,812			
ANOVA ^a							
Model		Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	4,469	1	4,469	6,769	,010 ^b	
	Residual	102,981	156	,660			
	Total	107,449	157				
Coefficients ^a							
Model			Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
1	(Constant)		3,917	,275		14,220	<,001
	Internal control is functional		,160	,062	,204	2,602	,010
a. Dependent Variable: occurrence of circumstances indicating the occurrence of fraud.							
b. Predictors: (Constant), Internal control is functional.							

Source: authors' processing after SPSS

- for hypotheses 1 - 5, the Pearson R correlation coefficient with values between 0.554 and 0.690, shows that there is a positive correlation (reasonable in the case of values below 0.6) between the predictor and the dependent variable;
- for hypotheses 6 and 7, the Pearson R correlation coefficient with values of 0.266 and 0.204, shows that there is a weak positive correlation between the predictor and the dependent variable;
- the coefficient of determination with values between 0.042 and 0.476 indicates that 4.2% - 47.6% of the variation of the dependent variable is explained by the independent variable;
- the ANOVA test shows that the regression model predicts the dependent variable since the generated value of p is lower than the threshold of 0.05, which shows correlation between the predictor and the dependent variable;
- thus, hypotheses 1 - 7 are validated;
- the results of the regression coefficients show that the predictor variable X contributes statistically to the regression model and can be used to predict the dependent variables Y. For each additional unit of X, Y is expected to increase by an average between 0.160 - 0.639 units.

2.4.2 Quantitative study conclusions

The analysis of the above data shows that the existence of a functional internal control (implemented, brought to the attention of employees and actually used) has an influence on the activities carried out in an entity, starting from the implementation of operational procedures for the activities carried out, their degree of rigor, imperative and inflexibility, these hypotheses being validated in the analysis.

All these phases, related to the implementation of a solid internal managerial control, should lead to the diminution of the irregularities found by the external control bodies (hypothesis 6) and to the diminution of the various circumstances that favor the occurrence of fraud (hypothesis 7).

However, we note that in case no.6 (a functional internal control has a positive impact on the irregularities found by the external control bodies) the Pearson R correlation coefficient shows the existence of a weak positive correlation between the predictor and the dependent variable. Moreover, in case of hypothesis 7 (a functional internal control has a positive impact on the occurrence of circumstances indicating the occurrence of fraud), the significance coefficient of 0.209 and the value of the Pearson Chi Square indicator (15,631) show that it is not validated.

A plausible explanation for this result may be that not in all cases the importance of the existence of a well-structured, adapted to the specifics of each entity and actually implemented internal control is known. Just the written existence of some flows, of some operational procedures, without them really representing a way of working does not mean that there is an internal managerial control. It, through all its functional components (control environment, performance and risk management, control activities, information and communication, evaluation and audit), should prevent and be able to detect the occurrence of fraud, before all other external control bodies.

2.5 Analysis of the public's perception of the phenomenon of fraud and the importance of internal control in fraud prevention

Through a qualitative study, this research aims to highlight the attitudes and opinions of the general public towards the phenomenon of fraud. In addition, the research seeks to find out the importance of internal control, as it is perceived by the public, as a tool available to management that can counteract this phenomenon.

In order to identify them, a fraud known to the public was selected, namely the Ponzi pyramid scheme developed by Bernard Madoff. He was an American financier who committed the biggest scam of its kind in history, damaging thousands of investors with tens of billions of dollars over at least 17 years. He died in prison on April 14, 2021 while serving a 150-year sentence for money laundering, securities fraud and several other crimes.

Thus, a number of 52 articles, brochures and press interviews were selected, totaling a number of 1,537 pages.

Leximancer software was used to analyze this data. This is a text analysis tool that can be used to analyze the content of document collections and to visually display the extracted information. The information is displayed through a concept map that provides an overview of the materials, representing the main concepts contained in the text, as well as information on how they are related to each other.

Following the analysis of the materials, the program automatically selected a series of concepts (words, names, expressions) with the highest frequency of occurrence. Given that some of the concepts needed for the research were not automatically found, they were introduced manually as follows:

- simple concepts: control, internal, procedures, signal, supervision, alarm;
- compound concepts: internal control, supervision by management, supervision procedure, internal procedures, alarm signals, warning signals.

Preliminary results extracted by Leximancer software show frequency (number of occurrences), relevance (ratio between the number of occurrences of the analyzed concept and the number of occurrences of the most represented concept) and sentiment (positive or negative opinion from the text to the concept analyzed):

Table 12. The concepts analyzed by the qualitative method

Concept	Type	Number of occurrences identified	Relevance (%)	Sentiment (opinion) – no.	
				Favorable	Unfavorable
Madoff	name	1990	100	122	147
Ponzi	name	1074	54	75	58
investors	word	1536	77	131	107
scheme	word	1527	77	108	99
investment	word	1398	70	132	73
fraud	word	1389	70	101	119
...	...	...	...	...	...
system	word	165	8	20	35
social	word	155	8	12	7
intern	word - added manually	126	6	10	9
warning	word - added manually	58	3	7	3

Concept	Type	Number of occurrences	Relevance	Sentiment (opinion) – no.	
procedures	word - added manually	53	3	12	5
supervision	word - added manually	22	1	1	5
internal control	word - added manually	15	1	0	1
signal	word - added manually	9	0	2	0
warning signal	word - added manually	8	0	2	0
internal procedures	word - added manually	5	0	3	0

Source: authors' processing after Leximancer

We notice a higher relevance of the concepts that indicate the phenomenon of fraud itself (scheme - 77%, investments - 70%, fraud - 70%, funds - 37%, crisis - 23%, victims - 21%, etc.) over time what concepts related to the prevention and detection of the event are much less common (response - 18%, law - 17%, management - 13%, regulatory bodies - 11%). The concepts introduced manually are the least encountered in the analyzed texts: warning signal - 10%, control - 9%, alarm - 3%, procedures - 3%, supervision - 1%, internal control - 1%, alarm signals - some appearances, internal procedures - a few appearances.

This reveals that in the analyzed texts the emphasis was more on the description of the facts than on establishing a causal link between the occurrence of fraud and the lack of control mechanisms to prevent or detect it in time. This may be due to the greater interest of the authors of the texts in describing the "story" itself than to explaining how this phenomenon could be stopped or the lack of knowledge needed to inform the public that there are still methods of prevention.

Regarding the opinion on certain concepts analyzed, we note the following:

- ✓ there are predominantly unfavorable opinions for concepts such as: fraud, regulators, supervision, victims;
- ✓ there are mainly favorable opinions for concepts such as: law, management, warning signals, control, alarm;
- ✓ but there are also opinions that should normally be the opposite of what emerges from the analysis: for example, the concepts "procedures", "internal procedures", "alarm signals" have a generally favorable general opinion, although the lack or non-functionality led to the perpetuation of this phenomenon for 17 years.

Another analysis that can be done based on the introduced texts is the correspondence of one concept with another (number of fragments, phrases, etc. where the two concepts appear together) and the probability that in a text (fragment, phrase, block of text) a concept to appear with another.

Table 13. Correspondence between concepts

Concept	Corresponding to the concept													
	fraud		victims		risk		response		law		management		regulators	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
fraud	-	-	101	24	55	15	16	5	32	9	30	12	39	17
victims	101	7	-	-	2	1	30	8	6	2	7	3	5	2
risk	55	4	2	0	-	-	3	1	2	1	52	20	8	4
response	16	1	30	7	3	1	-	-	8	2	8	3	1	0
law	32	2	6	1	2	1	8	2	-	-	3	1	5	2
management	30	2	7	2	52	14	8	2	3	1	-	-	4	2
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
procedures	12	1	0	0	8	2	3	1	2	1	5	2	1	0
supervision	3	0	0	0	5	1	0	0	1	0	1	0	0	0
internal control	1	0	0	0	1	0	1	0	0	0	3	1	0	0
warning signal	2	0	1	0	0	0	0	0	0	0	1	0	0	0
internal procedures	1	0	0	0	4	1	0	0	0	0	0	0	0	0

Source: authors' processing after Leximancer

The analysis of the above data shows the following:

This shows that the internal control component of the management system should be better known and aware, as a solution to prevent these phenomena.

Figure 3. Concept map view

3. CONCLUSIONS

Fraud detection is the process by which the existence of this phenomenon is noted, the fraudster, the victim and the causes that caused it are established. The key to fraud detection is the ability to identify errors and irregularities. Although there are uncertain signs or symptoms of fraud, each fraud is always followed by certain signs.

Particular attention should be paid to opportunities for fraud, such as control deficiencies in internal control systems, in verifying that the mechanisms implemented to prevent fraud are adequate and effective.

Furthermore, public bodies should ensure awareness of fraud reporting procedures, certify that management checks are carried out properly, as these checks are an important tool in discouraging and detecting fraud, and use double checking information, including checking the information with a third party if there are any suspicions.

The phenomenon of fraud is as current as it is important for public institutions in Romania and for society as a whole. Given that an important part of the gross domestic product is used to finance these institutions, the protection of these resources is a imperative task for each public entity. Risk awareness, determining the response to it as well as finding appropriate methods of fraud detection, suitable for each organization, remain the responsibility of the management of each public entity.

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