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Identifying the Risk Factors Affecting Banking Fraud by Delphi Method (Case Study: Resalat Bank of Isfahan Province)

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ABSTRACT

The recent financial scandals, the reported frauds, and the increased severity of concerns over money laundering have made banks and financial institutions actively seek to accelerate the identification of the determinants of fraud. Therefore, the primary goal of this study was to identify the risk factors influencing the likelihood of bank frauds.

The present study is an applied study with regard to its goal and a descriptive survey study with regard to its method. Research data is collected using the Delphi method and questionnaires completed by 41 experts (including the computer-based [1]accounting information system experts, the administration's experts, and the internal audit and financial examination experts in the branches of Resalat Bank in Isfahan Province) from 2016 to 2017. The resulting data is analyzed using the t-test, Kolmogorov–Smirnov test, and Kruskal–Wallis test.

The research findings show that the risk factors associated with "financial instability", "liquidity", "managers' failure to abide by the internal controls and binding standards", and "internal security threats" influence the occurrence of fraud.

Considering the research findings, financial institutions and banks in Iran could prevent fraud occurrence through having a more accurate plan, providing necessary contexts for improving the awareness of all the personnel on fraud risk factors and other antifraud methods including creating a proper moral atmosphere along creating motivation for the personnel.

The findings in this study could help with gaining knowledge on the weak points of the banks' internal control systems and identifying the main risk factors in fraud occurrence

Keywords:

fraud, Delphi method, fraud risk factors, bank, Iran.

1. Introduction

Fraud is believed to be among the most critical problems and challenges in the organizations world today (Skousen & Wright, 2006) and is been considered as a global phenomenon, since it has universally penetrates both the private and public sectors to the extent that no country is protected from its taint although developing countries suffer the most (Okoye and Gbegi, 2013). According to Singleton et al (2006), fraud is a general term and includes all methods, including human skills and innovations, that are carried out by the individuals in order to gain benefit by obscuring the reality. However, fraud may be minimized by understanding its causes and taking proactive measures against it (Abdul Rahman & Salim, 2010).

According to the carried-out estimations, the cost of annual fraud is more than $3.5 trillion that is indisputably higher than the annual budget of several countries. (Association of Certified Fraud Examiners, 2016); for instance, internationally could be referred to the collapse of companies such as Enron and WorldCom that indicate a high volume of fraud (Robinson et al, 2012). In addition to corporations, in the last century, the issue of bank fraud has also expanded at an alarming rate. For example, in 2009, the chairman of a private mortgage company was charged almost $2 billion for a fraud scheme that included failures of Colonial Bank, one of the 50 largest banks in the United States, and Taylor, Bean & Whitaker, one of the largest privately held mortgage lending companies in the same country (KPMG, 2013). According to Napel (2013), the Australian economy has lost A$5.8 billion in fraud. Surveys have shown that these losses have sharply increased in highly difficult economic climates (Napel, 2013).

Likewise, Iran has encountered a growing number of fraud cases in recent decades and Unfortunately , there is no study providing an estimate of the fraud costs and its examples in Iran despite the public acknowledgement of the institutionalization of corruption. In addition, it is generally preferred not to research this topic. Therefore, despite the detection of major fraud and corruption cases, there is no official and nonofficial statistics on this issue. It is also sometimes even announced that the fraud and corruption index is at its lowest level in Iran (Davani and Amani, 2010). However, there is evidence of the importance of this issue in Iran. For instance, according to the international financial corruption index, Iran had the 130th rank among 168 countries that were assessed by the Transparency International in 2015 (the Transparency International report, 2015). In other words, Iran has the 130th rank among 168 countries regarding one of the examples of fraud, which is financial corruption. For instance, in 2011, the New York Times reported that 3,000 billion toman (approximately 2.6 billion USD) was lost due to fraud, resulting in the largest fraud loss in Iran in the last three decades. This case involved forged documents to obtain credit from at least seven different banks (Goldmann, 2010).

These issues forced researchers to take action in different aspects to tackle fraud, such as prevention, control and supervision. (Pedneault, 2010).

Despite the previous attempts such as the passage of the US Foreign Corrupt Practices Act 1977 and the Sarbanes–Oxley Act and the subsequent approval of pre-treatment prevention by virtue of similar acts in some countries, the managers' responsibility for fraud risk management has increased. Furthermore, an environment has been created wherein the managers of companies and organizations are seeking to develop and implement strategies to prevent and detect fraud and financial abuse and enforce the rules and regulations (Pedneault, 2010).

According to the above description,The first question that usually forms in the minds of the public about the fraud is about the role of regulating organizations in such companies. Do these companies not apply effective methods to tackle fraud? Were the proper and efficient selective system not at work while employing decent employees? Despite these questions, lesser attention has been paid to the identification of risk factors affecting fraud and implementation of methods to prevent it, while no extensive study has been carried out to address this issue.

Hence, this study tries to identify risk factors affecting fraud possibility, using questionnaire in Delphi method. In this study, four factors of liquidity, lack of financial stability, lack of obedience among managers from internal controls and necessary standards and interorganizational security threats, are considered as the fraud risk factors and the main question in this research is that: what is the role of each factor in fraud occurrence?

2. Literature Review

2.1. Definition of Fraud

Fraud has to do with intentional deception. Fraud can be defined as the deliberate use of trick, deceit, or any dishonest action to deprive another legal right, money of property (Ernst and Young, 2007). Kranacha (2013) and KPMG (2011) express that fraud involves the use of intentional deception and other logical actions to obtain an illegal advantage over an entity despite the harm it may cause.

The Association of Certified Fraud Examiners (ACFE) approves of a universal definition of fraud and states: "Any illegal action characterized by deceit, secrecy, and breach of trust is a fraud. These actions do not require violence and physical coercion. Frauds are committed by people and organizations with the aim of acquiring money, assets, or services, avoiding payments or loss of services, or obtaining commercial or personal benefits" (Association of Certified Fraud Examiners, 2012).

2.2. Types of Fraud

Criminals have complex and ingenious methods for fraud and they are active all over the world. Due to the same reason, the issue of fraud is important in banks and financial institutes (Nasiri and Minai, 2011). Prevention and identification of fraud is an important part of risk management in banks. The objective in rapid identification of fraud is to stop it in the shortest possible time after its occurrence. Some of the bank frauds that have been identified so far include: signature forger, illegal loans, fraud in bank documents, excessive purchase statements, fake prizes, impersonation, seller's frauds (Merchant Collusion and Triangulation), Internet scams (website cloning, fake sale website, Credit Card Generators, phishing), lost or stolen cards, taking control of account without using the card, not receiving the card, searching the trash bin, fake cards (Erasing the magnetic Stripe, creating fake card, Skimming, blank card), postal theft, disclosing information at the workplace or home, social networks, Bankruptcy Fraud, fraud in ATM (Lebanese Loop and Shoulder Surfing) and Imposters (Delamaire et al, 2009; Paasch, 2008; Patidar & Sharma, 2011; Sakharova, 2012). also, frauds in banks can be classified as (a) Advanced Fee Fraud ("419"), (b) Cheque Kiting, (c) Account Opening Fraud, (d) Letter of Credit Fraud, (e) Money Transfer Fraud, (f) Loan Fraud, (g) Counterfeit Financial Instruments, (h) Cheque Fraud, (i) Money Laundering Fraud, (j) Clearing Fraud, (k) Telex Fraud, (L) Computer Fraud and (m) Management Fraud (Bank Administrative Institute) in (Aruomoaghe & Ikyume, 2013)

Based on the report by the Association of Certified Fraud Examiners, the different types of fraud in financial areas include financial corruption, wealth abuse, and frauds in financial statements (Association of Certified Fraud Examiners, 2008).

1) Financial corruption: It is a form of fraud whereby the employees of a unit abuse their influence to obtain direct or indirect benefits. Examples are charging commissions and receiving bribes.

2) Wealth abuse or embezzlement: This is generally known as the personnel's fraud and it involves the theft or abuse of the organization's assets or balance using fake or misleading records/documents.

3) Frauds in financial statements: It refers to inaccurate presentation, removal of items, and failure to disclose adequate information with the aim of deceiving the users of financial statements, especially the investors and creditors. It is usually accompanied via the overestimation of the assets and revenues and the underestimation of the liabilities and expenses, vice versa.

For instance, according to Spathis (2002), a fraud in financial statements could be performed through changing accounting methods, changing managing estimations and incorrect identification of incomes and expenses.

Clearly, bank frauds are not limited to the aforementioned cases and criminals use other methods, as well. As the banks try to increase their security measures in order to prevent the frauds, frauds use modern methods.

2.3. Fraud Theories (Bank Fraud Reasons)

2.3.1. Fraud Triangle

Various theories and approaches have been proposed about the factors leading to fraud, and any of these theories have tried to explain the elements in fraud occurrence. One of the most significant theories in this regard is the fraud triangle theory, that considers the motivation or pressure, opportunity and justification as three factors for fraud occurrence (Kassem & Higson, 2012). In the meantime, financial

pressures and motivations are among the major factors in fraud occurrence, so that, around 95 percent of frauds are due to the financial pressures (Abdullahi, Mansor, & Nuhu, 2015).

2.3.2. Fraud Diamond

Wolfe and Hermanson (2004) argued that other qualities can be added to the fraud triangle. After adding "capability" to this triangle, they called it the "fraud diamond". They believe most frauds are committed when a person believes he/she has the capability to commit a fraud without having the right to.

2.4. Fraud Risk Factors

In the Iranian Audit Standard no. 24 and the Statement of Audit Standards (SAS) no. 99 (Association of Certified Fraud Examiners, 2002), a set of conditions and situations that signal the commitment of a fraud is introduced as the set of the "fraud risk factors". Multiple comprehensive examples of the fraud risk factors mentioned in the research hypotheses are listed below based on the appendix to the Iranian Audit Standard no. 24, the Statement of Audit Standards no. 99, the questionnaires, and the interviews held with the statistical population of the study.

The risk factors associated with the operating qualities, Financial instability, and liquidity: These fraud risk factors are associated with the nature, complexity, transactions, financial conditions, and profitability of the unit. Examples are exertion of heavy pressure on the unit for the attraction of additional capital, the inability to create liquidity during operations despite the earning reports, major complicated transactions with non-ordinary and related persons, instability of the borrowing rates, and ambitious and unattainable plans.

These risk factors include the risk factors associated with the bank managers' failure to abide by the local controls and binding standards, which are linked to the creation of an environment with the right internal controls in which all the management and the employees abide by the controls and standards. Examples are one or several employees' failure to concentrate on the key affairs or the lack of adequate supervision over the key controls.

The risk factors associated with the security threats are classified into the following three categories (Arab Maraz Yazdi, 2010).

A) Internal threats versus the external threats (according to the threat source): The organization's employees are the most important source of internal threats, while hackers are the main source of external threats.

B) Human threats versus non-human threats (according to the threat factor): The humans security treats originate from the human actions such as negligence, ignorance, and incapability. Furthermore, the non-human threats generally include the technical threats such as technical problems in the system.

C) Accidental threats versus deliberate threats (according to the committer's intention): The accidental threats do not originate from vengeful intentions whereas the deliberate threats originate from malicious intentions (e.g. computer frauds).

2.5. Fraud Detection and Prevention Methods

Focusing on antifraud activities have transformed from detection to prevention. Antifraud professional such as auditors and investigators are of the idea that the majority of the fraud victims could hardly retrieve their stolen properties, for frauds never save the properties retrieved from fraud (Kranachar, 2013).

Fraud prevention and detection are interrelated issue, while they do not share the same concept. Fraud prevention includes a strategies, approaches, trainings and communications that prevent fraud, while fraud detection emphasizes on the activities and methods that detect the fraud occurrence in real-time and with a sensitivity for the timing, or detect fraud in progress (Rahimiyan, 2011).

2.5.1. Informing

Fraud, theft and embezzlement are generally carried out in one process and the main motivation of their agents is meeting their financial needs; with this difference that, fraud is carried in cooperation with several individuals (Davani and Amani, 2010). In the annual report of Association of Certified Fraud Examiners (2014), it was announced that informing, especially by the employees, is still the most effective

method in fraud detection, since 42.2 percent of the early fraud detection is carried out through this.

2.5.2. Sarbanes–Oxley Act Law

Sarbanes–Oxley Act law is one of the major evolutions in accounting that convinces organizations to search more for the fraud detection. This law made the issue of taking care of frauds, by the organizations themselves, very hard. In order to take care of the frauds, organizations require external services. Hence, accountants are the best choices for the organization in such situations (Levine, 2008).

2.5.3. The Low Dodd Frank

American Securities and Exchange commission published The low Dodd Frank law in 2011. This circular created a great motivation for the public corruption informants. Individuals who deliver information that leads to the detection of financial offenses and also leads to pecuniary penalties over $1 million of the criminal in the court, receive cash awards. This award could be 10-30 percent of the fraud amount (Levine, 2008).

2.5.4. Basel Committee

Basel Committee was established in BIS in 2014. Basel Committee members include member of G10 along with Luxemburg and Spain and it is considered as the most important international institution involved in bank supervision. In fact, Basel Committee was established to meet a global necessity for cooperation in bank supervision such as providing strategies and recommendations in supervision, encouraging convergence in using bank supervision standards and methods in the member countries and other interested countries, with an objective to provide health and security in the banks. Among the most important measures taken by Basel Committee is providing and publishing basic guides in efficient and effective bank supervision and also regulations related to the capital adequacy.

2.6. Research Background

Yan Huang et al. (2017) carried out a study to identify the fraud factors in financial statements and rank these factors using the fuzzy AHP technique. Through a review of the research literature and different expert opinions, they studied the different fraud factors. Their findings revealed that the most important fraud factor is pressure or motivation, while the least important factor is the attitude or rationality. Moreover, the five other fraud factors are poor performance, need for external financing, financial crisis, inadequate supervision by the board of directors, and competition or market glut.

In a study titled "the fraud threat to the banking industry: an empirical study in India".

Barzegari Khanghah et al. (2015) assessed the importance of the fraud risk factors and the prevalence of these factors in Yazd Province. The results of ranking the fraud factors using the fuzzy TOPSIS technique revealed that the "inadequate supervision over the important local controls" and the "management's benefit in underestimating profit for reducing taxes using the wrong methods" have the first rank in the industries in Yazd Province as regards importance and prevalence.

Bhasin (2015) stated "with the growth of the banking industry in India, fraud increases in banks and forgers behave more cleverly. Hence, preventive steps such as fraud risk assessment can help reduce the possible loss and damage resulting from frauds. Hence, it is time to prioritize the security of banks. This research is a questionnaire-based study carried out on 345 bank employees. In this study, the employees' understanding of bank frauds and their factors are analyzed. The results of this study suggest that a lack of personnel training, weakness of the internal control system, and poor coordination among the managers, offices, and employees influence the commitment of fraud.

Afayi (2014) examined the effect of fraud on the performance of banking industry in the United States of America (USA). Banks as a whole was examined , give answers to why bank failed, examined how many banks have failed or what percentage of banks have failed in USA as a result of fraud, scrutinized the protective measures the banking industry have taken to prevent fraudulent practices and list any corrective action if need be. The study spanned from 2000-2014 in which about 523 banks have failed throughout USA. In method 1, the ratio of bank failure caused by fraud as opposed to other factors- out of 20 selected banks, 8 banks representing 40 percent failed due to fraudulent practices.

Olatunji and Adekola (2014) assessed the nature, causes, effects, diagnosis, and prevention of fraud in

Nigerian banks in a study titled "an analysis of fraud in banks: the experience of Nigeria". Data was collected using questionnaires and the annual reports of the Nigeria Deposit Insurance Corporation (NDIC), and the information on all frauds in 10 banks with the highest number of frauds was used. This paper explored the behavior of the personnel who committed fraud. It concluded that in the battle against fraud, banks must adopt an effective internal control mechanism to establish balance between the punishment of the criminals and the rewards provided to properly treat the disappointed employees.

Okoroafor (2013) reviewed various forms of fraudulent practices and their impact on bank deposits in Nigerian banks, for the period 1993-2010. They looked at the amount of bank funds lost to frauds and related it to total deposit liabilities of insured money banks in Nigeria. They used descriptive and inferential statistics in the study. It was revealed that there exist significant relationship between bank deposits and amount lost to fraud with fraudulent withdrawals constituting the bulk of the fraud.

In a field study, Hasheminejad et al, (2012), identified the parameters affecting embezzlement in Iran with a special approach towards large financial embezzlements in 2010 and subsequently, using the collected data from 117 questionnaires, these parameters were prioritized. Ultimately, based on the derived results, recommendations and solutions were proposed for prevention of such issues.

In a research, Amiri and Bakanizad, (2008), studied different bank frauds and smart methods in fraud detecting in the bank systems based on smart data analysis and the results suggested that banks are among the organizations that are in direct interaction with the clients. Hence, analyzing the clients' behavior for increasing their loyalty is of great significance.

2.7. Research Question and Hypotheses

Considering the objective and theoretical framework of the research in this study, the research question and hypotheses are as the following:

2.7.1. Question

According to the experts, what are the risk factors affecting the fraud occurrence in the banks?

2.7.2. Hypotheses

Hypothesis 1: The risk factors associated with financial instability have a significant effect on the occurrence of fraud.

Hypothesis 2: The risk factors associated with liquidity have a significant effect on the occurrence of fraud.

Hypothesis 3: The risk factors associated with the managers' disobedience to the domestic controls and obligatory standards have a significant effect on the occurrence of fraud.

Hypothesis 4: The risk factor associated with intra-organizational security threats have a significant effect on the occurrence of fraud.

3. Methodology

The objective in this research is to identify the risk factors affecting fraud occurrence in Resalat Banks in Isfahan Province, using Delphi research method and also collecting experts' opinion in this regard. Delphi method is a systematic approach in research for extracting the opinions from a group of experts on a certain issue, (Hsu and Sandford, 2008) or reaching a group consensus through a series of questionnaire rounds with protecting the anonymity of the participants and the feedback of the panel members (Keeney et al, 2001). This study is an applied study and of descriptive-survey type. The data collection interval and hypotheses analysis and reaching the research objectives were 2016-2017.

In the first stage of the research, the fraud risk factors were extracted through the Basel Committee guidelines, reports from Association of Certified Fraud Examiners Americans and Iran No. 240 Auditing Statement, that is a translation of American No. 99 Auditing Statement. Subsequently, these factors were categorized in four categories of liquidity, lack of financial stability, lack of obedience among managers from internal controls and necessary standards and interorganizational security threats. In the next stage, the data collection instrument for answering the research questions, that included a 27-item questionnaire, was designed, and the positive and negative opinion of the experts was collected about each questionnaire item and subsequent to that, the positive answer intensity was assessed in a scale of 1 to 7. Ultimately, using the aforementioned

questionnaire and Delphi method, the opinion of experts active in finance/banking fields was collected.

3.1. Research Statistical Population and Sampling Method

In Delphi method, there is generally no accurate mechanism for identification of the number of the individuals or members for including in each study, Hsu and Sandford (2007), claimed that Delphi group should be specialized in the field related to the study and be broadminded. Since the statistical population in this study includes financial managers, computer accounting data systems experts, headquarters experts, and internal financial investigation and auditing experts of Resalat Banks in Isfahan Province, and considering the limited number of the experts in this field, snowball sampling was used to identify them. In this method, each participant introduces the next individual for answering the questionnaire. Ultimately, the total of the Delphi members reached 41, that is presented in the following table.

As stated above, we attempted in this study to identify the factors that influence the occurrence of fraud in banks, so expert opinion on this issue was obtained through Delphi questionnaire method and the final model was extracted. Figure 1 illustrates the above process.

Table 1: Composition of specialized subgroups

specialists	Number	Frequency
Bank Accounting Officers and Managers	11	%27
Internal auditors	11	%27
Computer Systems Experts	13	%31
Investigators	6	%15
Total	41	%100

Table 2: Descriptive statistics of statistical sample

specialists		total		Financial Managers		Internal auditors		System experts		Investigators	
		Part	total	Part	total	Part	total	Part	total	Part	total
degree of education	Bachelor	18	41	0	11	6	11	8	13	2	6
	Masters	21		10		4		5		4	
	Doctor	2		1		1		0		0	
Major	Accounting	15	41	5	11	9	11	0	13	1	6
	Management	10		3		2		0		5	
	Economy	3		3		0		0		0	
	Computer	13		0		0		13		0	
Sex	Female	2	41	0	11	1	11	0	13	1	6
	male	39		11		10		13		5	

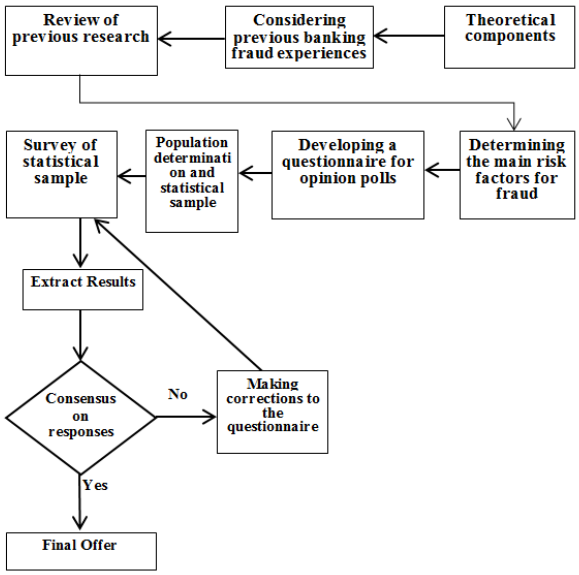

Figure 1: The process of investigating and identifying bank fraud risk factors

3.2. Questionnaire Validity and Reliability

In order to test the validity of the designed questionnaire, content validity method (CVR) was used, and through this, 15 members were asked to score each component of the questionnaire based in Table 3. Results suggest that, considering the CVR value being larger than 0.49, (Nikneshan et al, 2010) the content validity of the research components is approved.

Reliability of the instrument, that is interpreted as the accuracy, was measured by Cronbach's alpha method. Cronbach's alpha coefficient indicates the capability of the questions in proper explanation of its aspects. Cronbach's alpha value of larger than 0.7 shows an acceptable reliability (Moss et al, 1998).

Since Cronbach's alpha coefficient for the questionnaire items is 0.7, they have a desirable reliability for collecting the experts' opinions.

Table 3: Validity of the research questionnaire

Total number of experts answering questions to confirm the validity of the questions	CVR					
	Unnecessary	Useful but not necessary	Necessary	Result	Calculation method	Confirmation Delete /
15 person	0	1	14	$0/86 > 0/49$	$CVR = \frac{14 - \frac{15}{2}}{\frac{15}{2}}$	Confirmation

Table 4: Cronbach's alpha test questionnaire results

Hypothesis	Subscales	Number of questions	Cronbach's alpha	Reliability
1	Financial instability	5	0/785	Optimal
2	liquidity	6	0/821	Optimal
3	the managers' failure to abide by the internal controls and binding standards	6	0/861	Optimal
4	Internal security threats	10	0/754	Optimal
-	The whole questionnaire	27	0/831	Optimal

3.3. Statistical Tests for Studying the Subjects Included in the Questionnaire

In order to study the experts' opinions and also test the research hypotheses, the approval or rejection of the questions, the intensity of agreement and disagreement, consensus or lack of consensus on the subject and ultimately similarity of opinions about the proposed subjects should be clear. In order to achieve this, some tests were designed and implemented, that are presented in Table 5.

Table 5: Statistical tests

Test Type	Reason for Carrying Out the Test	Hypotheses
One Sample t test	Comparing the positive and negative responses average	H0: Responses average is lower than 4. H1: Responses average is higher than 4.
Independent Sample t test	Awareness on the intensity of agreement and disagreement of the participants on the subject	H0: The responses average in both groups of "for" and "against" is not significant. H1: The responses average in both groups of "for" and "against" is significant.
Kolmogorov–Smirnov test	Studying the presence or lack of presence of consensus among the participants	H0: There is not any consensus on the proposed subject among the participants. H1: There is any consensus on the proposed subject among the participants.
Kruskal Wallis Test	Recognition of responses consistency	H0: The responses average among the first, second, third, … groups are consistent. H1: The responses average among the first, second, third, … groups are not consistent.

4. Results

Table 6 presents a brief result of T-test for studying the agreement and disagreement of the statistical sample on the subjects proposed in the questionnaire.

As it could be observed from Table 6, t statistic value for all questions is larger than 1.96 and the error value is lower than the acceptable maximum error (0α = 0.05) at 95% confidence level. Hence, it could be concluded that the experts agreed with the subjects proposed in any of the questions related to the research hypotheses and all four hypotheses are approved at 95% confidence level. In other words, according to the above explanation, the first hypothesis of the research (Financial instability) is confirmed since it has a t-value of 8.065 Likewise the second hypothesis (liquidity), third hypothesis (the managers' failure to abide by the internal controls and binding standards), and fourth hypothesis (Internal security threats) hypotheses have a t-value statistic 5.010 , 4.106 and 7.417, which are approved. On the one hand, in addition to approval or rejection of the research hypotheses, the intensity of agreement and disagreement, consensus or lack of consensus on the subject and ultimately similarity of opinions about the proposed subjects should be clear, among different groups. Table 7 presents a brief result of these studies.

Table 6: Result of a one-sample t-test for investigating research hypotheses

questions	Upper and lower limit distance at confidence level 0.95		Averages difference	sig	df	T statistic value	Result	Agree or disagree
1	2.17	1.00	1.585	0.000	40	5.466	H_1 Confirmation	Agreement
2	2.20	1.21	1.707	0.000	40	6.967	H_1 Confirmation	Agreement
3	1.62	0.57	1.098	0.000	40	4.207	H_1 Confirmation	Agreement
4	1.86	0.97	1.415	0.000	40	6.489	H_1 Confirmation	Agreement
5	1.55	0.50	1.024	0.000	40	3.938	H_1 Confirmation	Agreement
-	1.71	1.02	1.366	0.000	40	8.065	Confirmation of the first hypothesis	
6	1.50	0.36	.927	0.002	40	3.282	H_1 Confirmation	Agreement
7	1.74	0.65	1.195	0.000	40	4.447	H_1 Confirmation	Agreement
8	1.67	0.52	1.098	0.000	40	3.845	H_1 Confirmation	Agreement

questions	Upper and lower limit distance at confidence level 0.95		Averages difference	sig	df	T statistic value	Result	Agree or disagree
9	1.68	0.62	1.146	0.000	40	4.365	H_1 Confirmation	Agreement
10	1.53	0.42	.976	0.001	40	3.534	H_1 Confirmation	Agreement
11	1.56	0.39	.976	0.002	40	3.351	H_1 Confirmation	Agreement
-	1.48	0.63	1.053	0.000	40	5.010	Confirmation of the second hypothesis	
12	1.47	0.33	.902	0.003	40	3.210	H_1 Confirmation	Agreement
13	1.76	0.53	1.146	0.001	40	3.752	H_1 Confirmation	Agreement
14	1.54	0.32	.927	0.004	40	3.077	H_1 Confirmation	Agreement
15	1.44	0.27	.854	0.005	40	2.952	H_1 Confirmation	Agreement
16	1.60	0.35	.976	0.003	40	3.174	H_1 Confirmation	Agreement
17	1.83	0.56	1.195	0.000	40	3.797	H_1 Confirmation	Agreement
-	1.49	0.51	1.000	0.000	40	4.106	Confirmation of the third hypothesis	
18	1.76	0.77	1.268	0.000	40	5.187	H_1 Confirmation	Agreement
19	1.53	0.42	.976	0.001	40	3.534	H_1 Confirmation	Agreement
20	1.43	0.42	.927	0.001	40	3.702	H_1 Confirmation	Agreement
21	1.71	0.68	1.195	0.000	40	4.648	H_1 Confirmation	Agreement
22	1.88	0.81	1.341	0.000	40	5.061	H_1 Confirmation	Agreement
23	1.77	0.72	1.244	0.000	40	4.813	H_1 Confirmation	Agreement
24	1.96	0.82	1.390	0.000	40	4.905	H_1 Confirmation	Agreement
25	1.92	0.81	1.366	0.000	40	4.977	H_1 Confirmation	Agreement
26	1.85	0.74	1.293	0.000	40	4.692	H_1 Confirmation	Agreement
27	1.90	0.74	1.317	0.000	40	4.593	H_1 Confirmation	Agreement
-	1.57	0.90	1.232	0.000	40	7.417	Confirmation of the fourth hypothesis	

Table 7: Summary of Results of Other Research Tests

questions	The factor or subject to be measured	Strongly Agree / Disagree				Consensus / lack of consensus			The answers are the same		
		Independent Sample t test				Kolmogorov–Smirnov test (k-s)			Kruskal Wallis Test (Chi- Square)		
		Statistics value	df	sig	Result	Statistics value	sig	Result	Statistics value	sig	Result
1	Financial instability	13.016	28.048	0.000	Strong agreement	0.362	0.000	consensus	2.235	0.525	same
2		4.828	39.000	0.000	Strong agreement	0.258	0.000	consensus	0.554	0.907	same
3		10.151	38.736	0.000	Strong agreement	0.257	0.000	consensus	0.693	0.875	same
4		4.221	39.000	0.000	Strong agreement	0.297	0.000	consensus	1.434	0.698	same
5		9.209	28.578	0.000	Strong agreement	0.267	0.000	consensus	0.588	0.899	same
6	liquidity	10.369	38.915	0.000	Strong agreement	0.232	0.000	consensus	6.200	0.102	same
7		9.863	28.719	0.000	Strong agreement	0.244	0.000	consensus	4.200	0.241	same
8		11.923	38.969	0.000	Strong agreement	0.226	0.000	consensus	4.032	0.258	same
9		10.63	33.101	0.000	Strong agreement	0.231	0.000	consensus	2.162	0.539	same
10		12.371	38.934	0.000	Strong agreement	0.255	0.000	consensus	1.302	0.729	same
11		11.788	38.933	0.000	Strong agreement	0.221	0.000	consensus	1.554	0.67	same

questions	The factor or subject to be measured	Strongly Agree / Disagree				Consensus / lack of consensus			The answers are the same		
		Independent Sample t test				Kolmogorov–Smirnov test (k-s)			Kruskal Wallis Test (Chi- Square)		
		Statistics value	df	sig	Result	Statistics value	sig	Result	Statistics value	sig	Result
12	the managers' failure to abide by the internal controls and binding standards	10.262	37.892	0.000	Strong agreement	0.229	0.000	consensus	3.941	0.268	same
13		14.177	36.913	0.000	Strong agreement	0.254	0.000	consensus	8.207	0.042	Unmatched
14		11.452	38.836	0.000	Strong agreement	0.225	0.000	consensus	8.222	0.042	Unmatched
15		9.85	37.899	0.000	Strong agreement	0.214	0.000	consensus	7.044	0.071	same
16		9.967	25.478	0.000	Strong agreement	0.214	0.000	consensus	2.278	0.517	same
17		12.127	39.000	0.000	Strong agreement	0.289	0.000	consensus	9.551	0.023	Unmatched
18	Internal security threats	13.371	32.000	0.000	Strong agreement	0.265	0.000	consensus	9.519	0.023	Unmatched
19		9.319	18.883	0.000	Strong agreement	0.231	0.000	consensus	1.029	0.794	same
20		8.878	35.986	0.000	Strong agreement	0.304	0.000	consensus	1.895	0.595	same
21		7.736	39.000	0.000	Strong agreement	0.297	0.000	consensus	4.246	0.236	same
22		12.061	30.907	0.000	Strong agreement	0.261	0.000	consensus	3.473	0.324	same
23		8.832	19.709	0.000	Strong agreement	0.286	0.000	consensus	2.198	0.532	same
24		13.724	38.358	0.000	Strong agreement	0.276	0.000	consensus	0.956	0.812	same
25		8.719	39.000	0.000	Strong agreement	0.299	0.000	consensus	1.596	0.66	same
26		10.673	24.475	0.000	Strong agreement	0.248	0.000	consensus	4.899	0.179	same
27		11.876	28.579	0.000	Strong agreement	0.259	0.000	consensus	2.587	0.46	same

T-test results indicate that experts agreed intensely with each of the components of lack of financial stability, liquidity, lack of obedience among managers from internal controls and necessary standards and interorganizational security threats and there was a consensus among the four groups (accounting managers and financial managers, internal auditors, system experts and investigators) on the subjected proposed in questionnaire items. However, the opinions of the four groups were not similar in items 13, 14, 17 and 18. It is believed that these differences could be attributed to the experts' viewpoints.

5. Discussion and Conclusions

Along with the changes happening in Iran banking arena, protecting the interests of the depositors, and also attracting public trust in order to decrease the government control in the financial system of the country and continuing the liberation movement in this field, made reviewing the structure in the supervision part and considering modern banking supervision methods and identifying risk factors affecting fraud occurrence, that was the main objective of this study, even more necessary. In this research, four hypotheses, presented as the following, were studied:

The first hypothesis regarding the effect of the fraud risk factors that are associated with Financial instability on the incidence of fraud was tested. The results of testing this hypothesis indicated that the aforementioned risk factors can influence the incidence of fraud. To wit, the number of frauds committed increases with an increase in the fraud risk factors associated with Financial instability. These factors originate from Banks are highly vulnerable

towards loan interests, presence of pressure for gaining extra capital, choosing ambitious programs, complex organizational structure and probable encounter of the bank with bankruptcy risk. Evidently, the bank managers can significantly overcome and control this obstacle through more proper planning and more accurate selection of the employees at the time of recruiting.The results of testing the aforesaid hypothesis are in line with the findings reported by Maham et al. (2011). In their study, these researchers classified the risk factors associated with the operating qualities and Financial instability as the fraud risk factors.

The second hypothesis regarding the effect of the fraud risk factors that are associated with liquidity on the incidence of fraud was also tested. The results of testing this hypothesis revealed the effect of the aforementioned factors on the incidence of fraud. In other words, the commitment of fraud increases with an increase in the fraud risk factors. These factors originate from Presence of abnormal and complex transactions in the bank, weak financial status, high dependence on the facilities and low capability in returning the debts, trading combination are due to the weak financial statements and abnormal rapid growth of banks comparing to other active banks. Hence, it seems a more accurate understanding of the personnel and the workplace, the proper management of labor, and the exertion of the right internal controls effectively influence these risk factors. The results of testing this hypothesis comply with the findings reported by Moradi et al. (2014). These researchers classified the liquidity-related risk factors as the risk factors influencing the incidence of fraud.

The third hypothesis regarding the effect of the risk factors associated with the managers' failure to abide by the internal controls and the binding standards on the incidence of fraud was tested. The results of testing this hypothesis revealed the effect of the aforementioned factors on the incidence of fraud. In other words, the fraud commitment rate increases with an increase in the fraud risk factors. These factors originate from Lack of adequate supervision on the controls and shortcomings in the timely correction of the internal control system weaknesses, complete dominance of an individual or their groups on the management, lack of paying attention to the legal authorities by the managers and creating limitations for the auditors. Hence, the establishment of a proper internal control system and concern for the legal authorities can mitigate these risk factors. The results of testing this hypothesis are in line with the findings reported by Chiezey and Agbo (2013), Olatunji and Adekola (2014), and Bhasin (2015). The aforementioned researchers referred to the positive and significant effect of flaws in the internal control system and the failure to train the personnel on the incidence of fraud. The findings from the study by Maham et al. (2012) and Moradi e al. (2014) also confirm the findings from the present study. In their study, these researchers classified the risk factors associated with the operating qualities, liquidity, Financial instability, and managers' adherence to the internal controls and binding standards as the factors influencing the incidence of fraud.

The fourth hypothesis regarding the effect of fraud risk factors related to inner organizational security threats in the occurrence of cheating was presented and tested. The results of this test show that the mentioned risk factors could affect the occurrence of fraud. These factors can be caused by: Intentional insertion of incorrect data by the personnel, illegal observations, incorrect function of the organizations, illegal access of the personnel to the data, repeated modifications in the system in order to prevent incorrect data output, carrying out personal affairs during the worktime by the bank employees, unintentional entrance of viruses to the computers by the personnel, Therefore, bank managers must be familiar with a variety of threats and ways of creating inner organizational security to succeed in establishing security in their organizations. Of course, threats cannot be completely eradicated, but they can be limited to some extent. The result of this hypothesis is consistent with the findings of Loch et al (1992) and Haugen and selin (1999).

Financial institutes and banks are advised to prevent fraud occurrence through holding training workshops, in order to create a context for increasing the awareness of the personnel on the abovementioned risk factors and provide other antifraud solutions, including creating a moral atmosphere along with creating motivation among the employees. Also, it is recommended that a special association or institution is established for antifraud auditing in Iran. For instance, AICPA and ACFE in the U.S. have provided educational materials and opportunities for free training.

Considering the identified risk factors, future researchers are advised to focus on aspects of fraud occurrence that have been less studied, such as the psychological and social aspects. Ultimately, investors and financial suppliers of financial institutions and banks are advised to invest in banks that have lesser of the important bands regarding fraud, and considering the research results while making decisions.

Among the limitations of this study could be referred to the deficits of the questionnaire such as probability of misunderstanding and lack of comprehension of questionnaire items. Hence, it was tried to tackle these problems through contacting the experts on the phone and providing them in with E-mails along with providing extra information in the questionnaires.

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