### The Accounting Information Systems and Their Role in Reducing the Risks of Banking Funding

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Abstract: The research aimed to develop an integrated framework for evaluating the efficiency of accounting information systems to identify and measure, as well as reducing the risks of banking funding that threaten the bank's profitability and stability. Also, this study aims to identify the benefits achieved through using accounting information systems in banks and highlight some problems and barriers limit the application of accounting information systems and the extent commitment of the banks to these systems. The importance of the study is represented in identifying the characteristics of the accounting information systems and its contributing in reducing the risks of banking funding, as well as simulating and encouraging the banks to develop and update their accounting systems to reduce the risks of the banking transactions, and the extent contributing of these systems in the future and economic plans for the organization under the current study. The study's hypothesis is represented that, these systems will help in reducing the banking funding risks. The researcher used the deductive method to determine the problem and identify its nature, as well as the research axes. Also, the researcher used the inductive method to test the research hypothesis and the analytic descriptive method through following the approach of case study and analyses its data and interpret this data to perform accurate description for the problem. Also, the researcher used historical method to identify the previous studies related to the research topic.

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### Introduction:

The banks are characterized by special features the most important of which are raising of risks degree that surrounding the banking processes, which are increasing as a result of international economic developments and appearance of new products and investing services. The processes and activities of banking sector characterize by special nature which is more complicated from those available in other sectors the thing that requires to have accounting information systems which are suitable with its operations nature, from this point stems the importance of accounting information systems which have engaged a distinguished position for many organizations in difference of its forms, especially the banking sector which is a basic resource for précised and objective information and appropriateness upon which it depends in taking decisions and fulfilling predetermined basic and sub-objectives.

The banking sector faces different types of risks, the most important of which are funding risks which are connected with loans dealings and awarding credit. Management of these risks, its identifying, measuring and setting out necessary procedures in order to limit its effects are the most important factors that help in bank success and guarantee its persistence in banking market with satisfied revenues and low risks.

The applied accounting information system in the bank which is distinguished by its competency and

effectiveness is playing an important and eminent role through what it provides from information that helping departments and observational authorities in follow up banking activities and to identify the risks which can threatening it and to make the bank in secure from its negative impacts. The main factor in risks management is to produce financial lists that distinguished by its accuracy, appropriateness, reliability and timely in what is enabling their users to identify and measure the risks at once. Moreover, the accounting system outputs contribute in achieving planning operations, observation and performance evaluation, and also we can depend on it in rationalization of credential policies; in addition, the depositors and investors need it in order to reassure their money and investments and to be sure of the level of risks that threatening them and this will affect their economic decisions which are based on what is provided by these systems from information and indications whether the bank suffers from higher credential risks or losses in loans ...etc.

Whereas there is no banking activity which is not accompanied by a margin of risk, this research is an attempt to know the role of accounting information systems in reducing financing risks that threatening the bank and its profitability.

**Research Problem**: many banks are suffering from funding risks that affect their profitability and the rates of revenue from its activities in spite of technological

advancement and development and availability of modern informational systems the thing that evokes the following questions:

Is there a relationship between the applied accounting information systems and banking funding risks, what is the role of accounting information systems in reducing funding risks, are the banks depend on accounting information systems in managing these risks.

Research Importance: the importance of this study stems from the importance of accounting information systems and the extent of its contribution in limiting banking funding risks, stimulating and encouraging the banks on development and improvement of accounting information systems and using modern methods that working on identifying and measuring these risks that threatening the bank stability.

Research Objectives: this study aims to identify the gains that been fulfilled by using accounting information systems in banks, and to shed the light on its role in reducing banking funding risks, evaluating its competency in assisting banking management in identifying and measuring the risks and management of funding risks.

**Research Hypothesis**: the research seeks to test the basic hypothesis representing in that the accounting information systems help in reducing banking funding risks.

Research Methodology: in this research, the researcher used deductive methodology in order to identify the problem and to know its nature as well as the pivots of searching and to set forth the hypothesis. In addition, the researcher used the inductive methodology in order to test the research hypothesis upon which the researcher has been depended in his study. Moreover, the researcher has used the analytic descriptive methodology through following case study style which the researcher will be exposed and analyzes its data and interpreting them in order to reach to an accurate description for the problem and its results. In addition to the historical methodology in identifying the previous studies in relation to the research subject matter.

### Research Limits:

Special Limits: the number of Sudanese banks that work in Khartoum State.

Time Limits: questionnaire distribution year 2014

### The theoretical framework of the research

Accounting information systems in banks: the accounting as a system for information has its special importance in banking sector that is through what it provides from information and data that helping the management to perform its tasks from observation, follow up, drawing policies, future plans, and taking decisions in order to fulfill the objectives.

The accounting organization for the bank is one of the most important backlogs upon which its success is based and to perform its expected role completely, where data are collected through it from the documents that gathered as inputs to the system then operating these data by analysis, classification and summarization in order to obtain the reports representing the system outputs.

The accounting system in banks have been known as a group of forms, records, procedures and methods used in registration, summarization and reporting the required financial data by the administration in order to fulfill the observation and submitting them to the external authorities who are interesting in project works (Omar Hussain, 2010).

The banking accounting system is a group of materialistic and morale elements that conduct a group of works, procedures and arrangements in order to achieve a complete accounting cycle agreed by special nature with banking activity in the place where the money and its demand are met, whereas the financial events represent (its inputs), registration, summarization interpretation classification, (processing), financial lists, reports, statements (outputs) for the users whether within or outside the bank according to rules, determinants and documents.

Accounting system objectives in banks: the accounting system objectives in banks represent in the following:

- 1. To affirm accounting bonds for banking operations at once through a number of interrelated procedures special for each technical bank departments in order to save the time and for accuracy in preparation necessary data to follow up work progress and its observation so as to keep the bank's assets and to register its obligations more precisely for the customer. The importance of registration and keeping data is that it is used as a reference in preparation of financial reports for the bank and preparation of statements for customers for purpose of being sure of their accounts accuracy.
- 2. Achieving the principle of internal observation (Admon Tariq, 2010) which enabling the administration to detect the errors and compare the achieved results with what have been planned; and consequently evaluate the performance of different bank's activities.
- 3. The banking accounting system provides financial lists and reports about its different activities for management and central bank goals, where the central bank enables to achieve its mission from observation, supervision and directing.
- 4. Follow up the financial position for the bank in a daily manner through daily statements and budgets, the age of accounting system in the bank is one business day i.e. at the end of each business day

the ledger, balance, preparation of auditing budget are to be transferred and assuring the position at the end of each business day and identifying what are required from the bank from rights and obligations besides preparation of special statements for customers centers in a daily manner from customers service departments, providing the required banking facilitations and data about their customers day-by-day (Omar Hussain, 2010).

5. Achieving accuracy, correct and quick accomplishment for reports and what they consist from accounting data and information, where the accuracy should be in registration, preparation and editing so as the system would reflect the fact of financial position, the results of bank's business and to enable those who are interested to take the right decisions.

Risks of Banking funding: they are the risks that resulted from the other parties nonperforming their obligations within the limits of the conditions agreed on with the bank, and we can refer to as the risks of the ability for payment. In order to limit the funding risks that effect on the competence of bank performance the followings methods should be followed:

- Avoiding to concentrate the funding operations on certain customers or a certain economical sector besides of setting a limit for funding in each activity.
- Taking enough guarantees and paying attention to its conditions in terms of possession, ownership and mortgage; moreover, care should be taken for variation of guarantees where we must not focus on one type of guarantees whereas its value may be reduced in the future.
- Conducting enough studies about the project which will be financed and to be sure of figures and data that provided by the customer who is applying for funding as well as analyzing his financial lists in order to be sure from his financial position strength and his capability to pay his obligations.
- The bank should allocate some amounts for facing the doubtful debts or any losses which may take place in the future.
- Taking care of financial percentages and indicators and to know its meaning when taking banking funding decisions.
- The activity or the project that been funded should be followed up, and also to be sure that the funding is used for its purpose; in addition, we must take into consideration any change which may occur in the financial position for the customer, his reputation or capability to pay his obligations.

Accounting Information Systems and Measuring Banking Funding Risks:

In our recent era, the computerized accounting information systems are used for benefiting from their applications in measuring funding risks, where the computer capabilities are to be utilized in conducting complex accounting operations and using quantitative methods, mathematical models in analyzing data and solving the problems. Where these electronic systems are one of the important regulations in the field of evaluating useful information by measuring funding risks in banks due to their features that described by suitable time such as providing instant information about the customers who delay in paying the loans, besides the high speed in performing accounting operations, providing necessary information and conducting several pre-programmed observational tests to make sure that the conditions required by the system have been met such as inspection of maximum limit for funding. The accounting system provides instant indicators and information that help in predicting the risks that surrounding funding process such as the extent of customer capability to meet his obligations towards the bank according to certain agreed conditions; in addition to that the system provides instant information about delaying in loans payment, besides information about the applied funding policies according to previously prepared programs such as the life of facilitations, their due dates and the applicable accounting policies regarding the doubtful debts allocation.

The accounting system helps in managing these risks through periodical data that produced by it and which are helping in avoiding the risks that resulted from missing variation within the portfolio, and if a credential concentration of a certain customer isn't enjoy a good financial appropriateness and he works in an economical sector that affected by economical events and inconsistencies, here the degree of credential concentration risks would highly more than the other customer who is distinguished by the strength and appropriateness of his financial position and he works in an economic activity that distinguished by stability, and the maximum limit that permitted to be loaned for one person should be specified and to oblige the bank not to credential facilitations which are not included in guarantees to one person if he exceeds the specified percentage, and the aim of that is to protect the financial position of the bank to expose to risk in case the customer who have obtained big credential and unguaranteed facilitations from paying his obligations towards the Bank (Nawaf Jaber, 2013).

The system also can provide periodical data about the facilitations that been given by Uncollateralized that conform with the awarded funding upon which the bank is based in case the customer doesn't abide to pay with evaluation of these

guarantees periodically and specifying the amount of allocations; also the data about uncollateralized facilitations that given by the banks to one of well-known customers depending on his good reputation and his financial position strength, and it is preferred not to expand in giving such facilitations where the financial position of the customer may be changed for any reason which may be resulted in risks of inability of repayment.

The accounting system also provides reports about some cases that facing difficulties or irregular repayment which necessitate to determine its position in order to guarantee the regularity of its repayment and to specify the causes of difficulty.

Besides previous data, the accounting system provides the following indicators which are used in evaluation and measurement of funding risks which may make the bank facing doubtful or bad debts that lead to freezing of important part of his money.

And through the financial percentages which is one of the financial analysis tools, and which is considered as a tool for interpretation of financial lists and stating the relations between their content, the meanings of figures mentioned in them and by its virtue the bank can predict the risks before their occurrence; and thus, reduces the percentage of its vulnerability (Ali Abdullah, Lahia Musbah, 2011), and the following are some of them:

1. The indicator of doubtful debts allocation to total loans:

It refers to the amounts which the bank has been allocated for facing the credential risks, and these allocations are calculated according to percentages specified by the cash authority on the facilitations that given by the bank. The indicator states the volume of expected loss due to the doubtful debts measured by the total awarded loans. Whenever this percentage is raised this means that the bank faces high credential risks.

And they calculated as the following: <u>doubtful debts allocations</u>:

Total loans

2. Indicator of net bad debts to the credential facilitations (Ibrahim Mohammed, Nadiyah Shakir, 2010):

Increasing of this percentage indicates to raising in credential risks and refers to retreating of credential competence for the customer. And it is calculated by the following equation:

Net of bad debts

Credential facilitations

3. Indicator of property rights to the risk assets: this indicator measures the degree of property rights importance (capital, auxiliaries and retained profits) to the risk assets which are all banking assets except the cash in the fund and all governmental investments

(because they are guaranteed). It measures what the bank holds from its special money from risk assets. Raising of this percentage indicates to raising of security degree, and consequently the ability to face the risks including the credential risks. The higher the percentage the protection and prevention of depositors increased. It is measured as the following:

**Property Rights** 

Risk assets

4. Losses indicators in loans to total loans (Suhail, Alshiekh, Alaa, Anga, 2012):

Also one of the important percentages that provided by the accounting system and which its analysis leads to results and indications upon which we can depend in observation on credential risks, these percentages are taken as the following:

Losses in loans \* 100 = %

Total Loans

It is a very important percentage in controlling credential risks, and it is directly measure the losses that incurred by the bank through credential operations, the more higher the percentage is the indicator of credential risks is raised.

As well as a percentage of : <u>net loans burdens</u> \* 100

Total loans

 $= \frac{9}{0}$ 

It measures the percentage of what is the bank holds from burdens special for loans to total loans.

As well as a percentage of :  $\underline{\text{total loans}} * 100 = \frac{9}{6}$ 

Assets

The more the percentage is, it indicates to credential risks to which the bank exposed.

And it is well-known that the basic job of banks is credit and any credit associated by risks represented in inability of customer to repay his obligations towards the bank; therefore, the bank cautious by taking certain procedures such as being sure of customer's capability to repay and taking suitable guarantees. When the bank resolves to give a loan or a facilitation the credential and accounting regulations and procedures that help in limiting and reducing the cases of default and repayment cessation are to be taken.

The accounting system aims to protect the money and to conserve them through documented registration for these money, information and data which it provides, and which enabling to take good decisions and being sure of this aim when giving the loans in several issues (Mohammed Abdulhaleem, 2002):

1. To be sure of financial competence and capability of the customer When conducting a credential study for him, this competence is to be assured from studying profitability and financial

position for the customer, and the necessary data for this study appear in each of the income list, financial position list and cash flows list, where these lists should be submitted after been audited by the auditor that certifies the correctness of its data.

- 2. The role of the accountant is not restricted on reviewing financial lists that submitted to the bank in order to obtain a loan, but these data are to be analyzed by the internal accountants for the bank through using the indications that showing the profitability and the ability such as the profitability indicators, funding framework indicators, functioning capital turnover indicators, liquidity indicators and other indicators that been compared by the rates which should be available and according to that the decision of giving loan or not is to be taken.
- 3. To study the activity or the process for which the loan is given the bank uses an accountant or an auditor to prepare a feasibility study including the financial aspects for this project.
- 4. The bank requires to follow up the loans in field and office. The office follow up is done through the reports that prepared about activity ongoing, and these reports prepared by the accountant and revised by another accountant.

The accounting information are useful in continuous observation process for credit customers and studying the extent of fulfillment of activities' objectives, the extent of divergence from the previously specified plan, determine the risk positions and working for its remediation. To have an active continuous observation the feedback should be in suitable time in order to enable the administration to identify the divergences and taking necessary decisions to correct them in suitable time and by the required speed.

### **Applied study Procedures**:

Firstly: designing study tool: this study used the questionnaire as a main tool for obtaining necessary information and data about accounting information systems and its role in limiting funding risks, the study form consists of two parts:

First Part: includes special data for study sample individuals, which are the personal data in relation to study sample description: age, scientific qualification, scientific specialization, job position, years of experience.

### Second Part:

Including the study statement which consists of 15 pivots through which the research variables are identified. The potential responses degree also has been measured on the paragraphs to quintuple grading according to Likart quintuple scale, which is ranging from absolutely disagree to extremely agree, as stated in table No. (1)

Table No. (1) Agreement degree scale

Agreement degree	Weight
Extremely agree	5
Agree	4
Neutral	3
Disagree	2
Extremely disagree	1

Source: prepared by the researcher (2014)

The scale used in the study has been corrected as the following:

- Total degree for scale is total individual degrees on the statements (1+2+3+4+5)/5=(15/5)=3).

And probable means for these means as in the following table:

Table No. (2) weight and probable means for study scale:

Choice	Extremely disagree	Disagree	Neutral	Agree	Extremely disagree
Weight	1	2	3	4	5
Probable	0.1-1.79	1.8-2.59	2.9-	3.4-	4.2-5
means	0.1-1./9	1.6-2.39	3.39	4.19	4.2-3

Dr. Ezzaldeen Abdulfattah, introduction in descriptive and inferential statistics using SPSS (Cairo, Dar Alnahda Alarabiah, 1982), p. 540-541.

To reach to more accurate results to correct the used scale, to differentiate between the following levels:

- More than 4 above the agreed degrees from 4 to more than 3.5 positive agree.
- From 3.5 to above 3 average degree of agreement (inclines to positive).
- From 3 to more than 2.5 average degree of disagree (inclines to negative).
  - From 2.5 to more than 2 disagree (negative). Secondly: Evaluation of measurement tools:

Constancy and veracity tests have been used for removing non significant statements from study scales which are (15) statements, and been sure that the used for measuring a "certain" concept is actually measuring this concept and no other dimensions, in the following the researcher displays the results of analysis for the scales used in the study:

1. Veracity test of scale content:

Content veracity test has been conducted for the scale statements through evaluation of concept validity, and the scale statements have been shown to (3) specialized arbitrators in the study (see addendum).

2. Internal consistency and stability for the scales used in the study:

There are several methods for been sure of the scale consistency such as the half partitioning method and Alpha Cronbach's method for been sure of internal

consistency for the scale, (Cronbach's Alpha) has been used, which takes values that ranging between zero to integer one, and if there is no consistency in data then the value of coefficient would equal zero. On the contrary, if there is a full consistency in data, then the value of coefficient would equal integer one, i.e. increasing of Cronbach's Alpha coefficient means the increasing of credibility of data in reflecting the sample results on study community. Furthermore,

decreasing of value from (0.60) is an indication to reducing of internal consistency.

The following tables state the results of scale consistency analysis, stating the values of Cronbach's Alpha Coefficients for the study hypothesis:

The accounting information systems help in reducing banking funding risks:

Table No. (3) Results of Cronbach's Alpha Test for measuring hypothesis statements

	Cronbach's
Statements	Alpha
Using financial percentages helps in predicting financial default in the bank	0.82
	0.82
2. The accounting information systems outputs help the banking administration to be sure of	0.85
the extent of funding policy competence which contributes in limiting its risks.	
3. Accounting information systems periodically disclose the liquidity position in the bank which helps in limiting bank funding risks.	0.85
4. Accounting information systems periodically disclose the extent of capital competence in	0.05
limiting funding risks.	0.85
5. Accounting information systems contribute in follow up funding activity performance and	0.06
explaining the extent of divergence from the specified plan which helps in limiting funding risks.	0.86
6. Accounting information system provide data about the extent of the available guarantees	
conformity with the awarded loans which contributes in limiting bank funding risks.	0.85
7. Accounting information systems provide losses indicator in the loans to total loans which	0.81
helps in controlling the bank funding risks and limiting them.	0.01
8. Accounting information systems monitoring any changes in doubtful debts percentage to	0.82
total loans which helps in reducing bank funding risks and limiting the possibility of its occurrence.	0.82
9. The percentage of net bad debts to awarded loans helps the risks management and credit	0.00
management in judging the quality of credit which helps in reducing its associated risks.	0.80
Raising of property rights' percentage indicates to dangerous assets in the bank ability to	
control the funding risks and limiting from its occurrence in future.	0.83
11. Accounting information systems provide funding risks management by the changes in total	
loans percentage to the assets which contributes in reducing bank funding risks.	0.82
12. Accounting information systems distinguished by flexibility where it reflects any	0.02
modifications in funding policies and doubtful debts allocation which contributes in reducing bank	0.83
funding risks.	
13. Accounting information systems periodically provide necessary data about the awarded	0.80
loans, their age and profits which helps in taking rational decisions and reducing the funding risks.	0.00
14. Accounting information systems provide data about concentrations that increase from the	0.81
limited percentages from capital base for the bank which contributes in reducing funding risks.	0.01
15. Accounting information systems periodically provide data about distribution of loans	0.02
wallet to different sectors which contributes in reducing bank funding risks	0.82
Statements total	0.84

Source: researcher preparation from the reality of field study data, 2014.

It is clear from table (3) consistency test results that Cronbach's Alpha values for all statements are more than (60%, these values mean the availability of very higher degree of internal consistency for all statements whether to each statement separately or on the level of all scale statements where Cronbach's Alpha value for total scale was (0.84) which is higher consistency, then we can say that the scale on which the study has depended for measuring the statements

of hypothesis pivot (accounting information systems help in reducing bank funding risks) has internal consistency for its statements which enabling us to depend on these responses in fulfillment of study objectives and analyzing its results.

Thirdly: Study Community and Sample: the basic community for the study consists of a sample represented in Sudanese Banking Sector, and the research sample individuals have been selected

through random (purposeful) sample, (222) questionnaires have been distributed and (183) valid questionnaires have been retrieved that used in

analysis by retrieving percentage up to (82.4%), which is as the following:

**Table No. (4) Distribution of Forms to Study Community** 

Bank		Distributed Forms	Retrieved Forms
1.	Real Estate Bank	20	18
2.	Agricultural Bank	20	16
3.	Arabic Bank	20	15
4.	Um Durman National Bank	25	25
5.	Alneleen Bank	20	15
6.	Animal Wealth Bank	20	13
7.	Sudanese Farm Bank	19	16
8.	Saudi-Sudanese Bank	19	17
9.	Central Bank	20	17
10.	Alsalam Bank	20	16
11.	Albaraka Bank	19	16
Total		222	183

Source: Prepared by the researcher, 2014

# Fourthly: Statistical Analysis Method used in the study:

Statistical Package for Social Sciences (SPSS) has been used for analyzing questionnaire data through a group of suitable statistical methods for the nature of data, in order to fulfill the research objectives and testing study hypothesis, the following statistical tools have been used:

- 1. Reliability test has been conducted for questionnaire questions using each of:
  - a. Apparent veracity test.

Check out that the statements that used for measuring "certain" concept is actually measures this conceptions not other dimensions.

- b. Cronbach's Alpha Coefficient: it has been used for measuring internal consistency for the study statements to be sure of performance veracity.
- 2. Descriptive Statistic Methods: in order to describe study sample individuals characteristics through:
- a. Frequency distribution for questionnaire paragraphs statements

In order to identify general direction for sample individuals for each variable separately.

b. Standard Deviation:

To specify dispersion volume in individuals' responses for each statement about SMA.

### 3. Differences Test (K<sup>2</sup>)

This test has been used for testing statistical significance for study hypothesis at abstract level of 5%, this means that if the value of (K2) counted at abstract level less than 5% then the hypothesis of nonentity is rejected and the alternative hypothesis (availability of statistical significance relationship). But if (K2) value at abstract level is more than 5%,

this means to accept nonentity hypothesis; thus, there is no statistical significance relationship.

### **Analyzing Data and Testing Hypotheses:**

The statistic corrections for the collected data have been conducted using SPSS in order to obtain the study results which will be displayed and analyzed through the following:

Firstly: Study Sample Characteristics: the study sample consists of the following characteristics:

# 1. Distribution of study individuals according to age:

The age reflects the extent of researchers maturity and their seriousness in answering the questionnaire questions.

Table No. (5) Frequency distribution sample individuals according to age

Age	No.	Percentage %
30 and less	30	16.4
31-40 yrs.	70	38.3
41-50yrs.	55	30.1
51-60yrs	25	13.7
60 and above	3	1.6
Total	183	100

**Source**: Prepared by the researcher from questionnaire data (2014)

It is clear from table (5) that the majority of sample individuals their age ranging between (31-50) where their percentage was (68.4%) of total study individuals whereas the percentage of whose ages are ranging between (51-60) years (13.7%), but the sample individuals who are more than 60 years old their percentage was (1.6) only from total studied sample.

# 2. Distribution of sample individuals according to scientific qualification:

Where the scientific qualification for the researched individuals helps in understanding questionnaire paragraphs and answering them scientifically in order to reach to real results.

Table No. (6) Frequency Distribution for Study Sample Individuals According to Scientific Oualification Variable

Scientific	No.	Percentage %
Qualification		
Sudanese Certificate	10	5.5
Intermediate Diploma	11	6
Bachelor Degree	104	56.8
Higher Diploma	14	7.7
Master Degree	41	22.4
PhD	3	1.6
Total	183	100

Source: written by the researcher from questionnaire data (2014)

It is clear from table No. (6) that the majority of sample individuals university academic level is (Bachelor) where their percentage was (56.8%) of sample individuals whereas the percentage of those holding above university education (Higher Diploma, Master Degree, PhD) in sample was (31.7%). But those holding Sudanese certificate and intermediate Diploma their percentage was 11.5%) of total researched sample.

# 3. Distribution of Sample Individuals according to scientific major:

Where the specialization of researched individuals help in understanding study problem and answering the questionnaire professionally and high quality of giving realistic results.

Table No. (7) Frequency distribution for study sample individuals according to scientific specialization variable

Scientific specialization	No.	Percentage %
Banking risks	1	0.5
Information systems	11	6
Financial management	22	12
Banking studies	48	26.2
Business management	30	16.4
Auditing	7	3.8
Other	64	34.9
Total	183	100

Source: written by the researcher from questionnaire data (2014)

It is clear from table No. (7) that the majority of study individuals are from banking studies and

financial management specialization where their percentage was (38.2%) of sample individuals whereas the percentage of those specialized in information systems and business management was (37.9%) of total researched sample.

# 4. Distribution of sample individuals according to experience years:

Years of experience indicate to the extent of researched individuals capability to answer objectively and transparently in the field of study problem.

Table No. (8) Frequency distribution for sample individuals according to years of experience

Years of experience	No.	Percentage %
5 years and less	36	19.7
6-10 years	32	17.5
11-15 years	32	17.5
15-20 years	35	19.1
21-25 years	35	19.1
More than 25 years	13	7.1
Total	183	100

Source: written by the researcher from questionnaire data (2014)

It is clear from table (8) that most of sample individuals' years of experience are ranging from (15-25 years) where their percentage was (38.2%) of total sample individuals whereas the percentage of those whom their experience years ranging from (11-15 years) was (17.5%) but the sample individuals whose years of experience more than 25 years their percentage was (7.1%) of total research sample.

# 5. Distribution of Sample Individuals according to job position:

Job positions reflects the extent of researched individuals experience from getting acquaintance to issues more than others and consequently the accuracy of answering questionnaire questions.

Table No. (9) Frequency Distribution of sample individuals according to job variable

Job	No.	Percentage %
Bank manager	1	0.5
Deputy of bank	6	3.3
manager		
Branch manager	7	3.8
Head of department	55	30.1
Observer	28	15.3
Others	86	47
Total	183	100

Source: written by the researcher from questionnaire data (2014)

It is clear from table No. (9) that most of researched sample individuals from other jobs where their percentage was (47%) whereas the percentage of departments' head and branch managers in the sample was (33.9%), but the percentage banks managers and their deputies was (3.8%) of total sample.

### **Secondly: Data Analysis:**

# The basic data for study have been analyzed according to the following steps:

- 1. Frequency distribution for researched units answers to study statements through summarizing the data in tables which explain the values of each variable in order to explain the most important basic features for the sample in a form of figures, percentages and study statements.
- 2. Statistical analysis for study statements through estimating the mean and standard deviation for all study pivots in order to know the direction of study sample and order statements according to their relative importance.
- 3. Selection of significance differences (K2), and in order to test the availability of statistical significance differences between the numbers of agreed and disagreed individuals on the study hypotheses statements.

### Analyzing hypothetical data:

Accounting information systems help in reducing bank funding risks

Firstly: Frequency distribution of statements:

Table No. (10) frequency distribution for statements of second study hypothesis pivot

### **Secondly: Data Analysis:**

# The basic data for study have been analyzed according to the following steps:

- 1. Frequency distribution for researched units answers to study statements through summarizing the data in tables which explain the values of each variable in order to explain the most important basic features for the sample in a form of figures, percentages and study statements.
- 2. Statistical analysis for study statements through estimating the mean and standard deviation for all study pivots in order to know the direction of study sample and order statements according to their relative importance.
- 3. Selection of significance differences (K2), and in order to test the availability of statistical significance differences between the numbers of agreed and disagreed individuals on the study hypotheses statements.

Table No. (10) frequency distribution for statements of second study hypothesis pivot

Statement		emely	Agree			itral Disagree		Extremely disagree		
	No. % No		No.	%	No.	%	No.	%	No.	%
1. Using financial percentages contributes in predicting financial default in the bank	68	37.2	90	49.2	20	10.9	4	2.2	1	0.5
2. Accounting information systems outputs help the banking Admin. to be sure of the extent of funding policy competence which contributes in liming of risks.	54	29.5	98	53.6	27	14.8	3	1.6	1	0.5
3. Accounting information systems are periodically disclosing liquidity position in the bank which helps in limiting bank funding risks.	56	30.6	107	58.5	16	8.7	4	2.2	0	0
4. Accounting Information systems are periodically disclosing the extent of capital competency in limiting funding risks	62	33.9	96	52.5	21	11.5	4	2.2	0	0
5. Accounting information systems contribute in following up funding activities performance and explaining the extent of deviation from the specified plan which helps in limiting funding risks	54	29.5	95	51.9	31	16.9	3	1.6	0	0
6. Accounting information systems provide data about the extent of established guarantees match with giving loans which contributes in limiting bank funding risks.	59	32.2	96	52.5	22	12	4	2.2	2	1.1
7. Accounting information systems provide losses indicator in loans to total loans which	41	22.4	111	60.7	28	15.3	2	1.1	1	0.5

T	1	1	1		1	1		1		
helps in observation on bank funding risks										
and limiting them.										
8. Accounting information systems observing										
any changes in doubtful debts percentage to										
total loans which helps in reducing bank	52	28.4	96	52.5	30	16.4	4	2.2	1	0.5
funding risks and limiting the possibility of										
its occurrence.										
9. Net bad debts percentage to awarded loans										
helps risks management and credit										
management in controlling the quality of	47	25.7	98	53.6	30	16.4	8	4.4	0	0
credit which helps in reducing its associated										
risks.										
10. Raising of property rights percentage										
indicates to risky assets in bank ability to	45	24.6	98	53.6	38	20.8	2	1.1	0	0
control funding risks and limiting its	43	24.0	70	33.0	30	20.6		1.1	U	U
prospective occurrence.										
11. Accounting information systems provide										
funding risks management by changes in total	58	31.7	91	49.7	30	16.4	4	2.2	0	0
percentage of loans to assets which	36	31.7	91	49.7	30	10.4	4	2.2	U	U
contributes in reducing bank funding risks										
12. Accounting information systems										
characterized by flexibility where it reflects										
any adjustments in funding policies and bad	53	29	94	51.4	28	15.3	5	2.7	3	1.6
debts allocation which contributes in										
reducing bank funding risks										
13. Accounting information systems										
periodically provide necessary data about the										
awarded loans, their age and benefits which	65	35.5	97	53	19	10.4	2	1.1	0	0
help in taking rational decisions that reducing										
funding risks.										
14.Accounting information systems provide										
data about concentrations that exceeding										
from limited percentages of capital base for	55	30.1	99	54.1	27	14.8	2	1.1	0	0
the bank which contributes in reducing										
funding risks									<u></u>	
15. Accounting information systems provide										
periodical data about distribution of loans	51	27.8	95	51.9	34	18.6	3	1.6	0	0
wallet to different sectors which contributes	31	21.0	93	31.9	J4	10.0	,	1.0	U	U
in reducing banking funding										
Statements Total	820	29.9	1461	53.2	401	14.6	54	2	9	0.3
Carres Whitten broth a managed on from acception		1, (/	3014							

Source: Written by the researcher from questionnaire results (2014).

### Analyzing hypothetical data:

Accounting information systems help in reducing bank funding risks

Firstly: Frequency distribution of statements:

### The following is clear from table No. (10)

1. Most of sample individuals are agree on that using of financial percentages contributes in predicting financial default in the bank where their percentage was (86.4%) whereas the percentage of disagreed individuals was (2.7%). Sample individuals who didn't show specific answers their percentage was (10.09%).

- 2. Most of sample individuals are agree on that the accounting information systems outputs help the banking management to be sure of the extent of funding policy competence which contributes in limiting its risks where their percentage was (83.1%) whereas disagreed individuals percentage was (2.1%). Concerning the sample individuals who didn't show specified answers their percentage was (14.8%).
- 3. Most of sample individuals are agree on that the accounting information systems periodically disclose liquidity position in bank which helps in limiting bank funding risks where their percentage was (89.1%) whereas those who are disagree on that

was (1.6%). But the sample individuals who didn't show specific answers their percentage was (16.9%).

- 4. Most of the sample individuals are agree on that the accounting information systems periodically disclose the extent of capital competency in limiting funding risks where their percentage was (86.4%) whereas the percentage of those who are agree on that was (2.2%). But the sample individuals who didn't show specified answers their percentage was (11.5%).
- 5. Most of sample individuals are agree on that the accounting information systems contribute in following up the funding activity performance and explaining the extent of deviation about the specified plan which helps in limiting of funding risks (81.4%) whereas the percentage of those who are agree on the funding risks was (1.6%). But the sample individuals who didn't show specified answers their percentage was (16.9%).
- 6. Most of the sample individuals are agree on that the accounting information systems provide data about the extent of the established guarantees matching with the awarded loans which contributes in limiting of bank funding risks where their percentage was (84.7%) whereas disagree percentage was (3.3%). But the sample individuals who weren't showed specific answers was (12%).
- 7. Most of sample individuals are agree on that the accounting information systems provide losses indicator in loans to total loans which helps in controlling of bank funding risks and limiting them where their percentage was (83.1%) whereas the percentage of disagreement was (1.6%). But the sample individuals who weren't showed specified answers their percentage was (15.3%).
- 8. Most of sample individuals aren't showing specified answers to accounting information systems that observing any changes in doubtful debts percentage to total loans which helps in reducing bank funding risks and limiting the possibility of its occurrence their percentage was (80.9%) whereas the percentage of those who are agree on that was (2.7%). But the disagreed sample individuals was (16.4%).
- 9. Most of sample individuals are agree that the percentage of net bad debts to the awarded loans helps risks management and credit management to control the quality of credit which helps in reducing its associated risks where its percentage was (79.3%) whereas the percentage of disagreed individuals was (4.4%. the sample individuals who haven't shown specific answers their percentage was (16.4%).
- 10. Most of sample individuals are agree that raising of property rights percentage to risky assets indicates to the ability of the bank to control funding risks and limiting its occurrence in future, where their percentage was (78.2%) whereas the percentage of those disagreeing on that was (1.1%). The sample

individuals who weren't showed specific answers their percentage was (20.8%).

- 11. Most of the sample individuals are agree on that the accounting information systems provide funding risks management by the changes in total percentage of loans to the assets which contributes in reducing bank funding risks where their percentage was (81.4%), whereas the percentage of disagree was (2.2%). The percentage of sample individuals who weren't showed specific answers was (16.4%).
- 12. Most of sample individuals are agree on that the accounting information systems are characterized by flexibility where it reflects any modifications in funding policies and doubtful debts allocation which contributes in reducing bank funding risks where their percentage was (80.4%) whereas the percentage of disagree individuals on that was (4.3%). Concerning sample individuals who weren't showed specified answers their percentage was (15.3%).
- 13. Most of the sample individuals are agree on that the accounting information systems periodically provide necessary data about the awarded loans, their age in taking rational decisions reduce funding risks where their percentage was (88.5%) whereas the percentage of disagreed individuals on that was (10.4%).
- 14. Most of the sample individuals are agree on that the accounting information systems provide data about concentrations that exceeding from specified percentages from capital base for the bank which contributes in reducing funding risks their percentage was (84.2%), whereas the percentage of disagreed individuals on that was (1.1%). The percentage of sample individuals who weren't showed specified answers was (14.8%).
- 15. Most of the sample individuals are agree on that the accounting information systems periodically provide data about distribution of loans wallet to different sectors which contributes in reducing bank funding risks where their percentage was (97.7%) whereas the percentage of disagreed individuals was (1.6%). The percentage of sample individuals who weren't showed specified answers was (18.6%).
- 16. Most of sample individuals are agree on that the statements of (second study hypothesis) pivot where their percentage was (83.1%) whereas the percentage of agreed individuals on that was (2.3%). The percentage of sample individuals who weren't showed specified answers was (14.6%).

### Secondly: Descriptive Statistics for Hypothetical Statements

The following is a table stating the mean, standard deviation and their relative importance for the statements as well as their order according to answers of researched individuals.

**Table No. (11) Descriptive Statistic for Hypothesis Statements** 

Table No. (11) Descriptive Statistic for Hypothesis Statements									
Statements	Standard Deviation	Mean	Sig.	Ranking / order					
1. Using financial percentages contributes in predicting financial default in the bank	0.761	4.20	Extremely agree	2					
2. The accounting information systems outputs help the banking management to be sure of the extent of funding policy competence which contributes in limiting its risks	0.742	4.09	Agree	8					
3. The accounting information systems periodically disclose liquidity position in bank which helps in limiting bank funding risks	0.672	4.17	Agree	4					
4. the accounting information systems periodically disclose the extent of capital competency in limiting funding risks.	0.715	4.18	Agree	3					
5. The accounting information systems contribute in following up the funding activity performance and explaining the extent of deviation about the specified plan which helps in limiting of funding risks	0.724	4.09	Agree	9					
6. The accounting information systems provide data about the extent of the established guarantees matching with the awarded loans which contributes in limiting of bank funding risks	0.784	4.13	Agree	5					
7. the accounting information systems provide losses indicator in loans to total loans which helps in controlling of bank funding risks and limiting them.	0.686	4.03	Agree	13					
8. Accounting information systems that observing any changes in doubtful debts percentage to total loans which helps in reducing bank funding risks and limiting the possibility of its occurrence	0.764	4.06	Agree	12					
9. The percentage of net bad debts to the awarded loans helps risks management and credit management to control the quality of credit which helps in reducing its associated risks	0.773	4.1	Agree	14					
10. Raising of property rights percentage to risky assets indicates to the ability of the bank to control funding risks and limiting its occurrence in future	0.773	4.01	Agree	15					
11. The accounting information systems provide funding risks management by the changes in total percentage of loans to the assets which contributes in reducing bank funding risks	0.747	4.10	Agree	7					
12. The accounting information systems are characterized by flexibility where it reflects any modifications in funding policies and doubtful debts allocation which contributes in reducing bank funding risks	0.837	4.03	Agree	11					
13. The accounting information systems periodically provide necessary data about the awarded loans, their age in taking rational decisions reduce funding risks.	0.672	4.22	Extremely agree	1					
14. The accounting information systems provide data about concentrations that exceeding from specified percentages from capital base for the bank which contributes in reducing funding risks.	0.690	4.13	Agree	6					
15. Accounting information systems provide periodical data about distribution of loans wallet to different sectors which helps in reducing bank funding risks.	0.727	4.05	Agree	10					
Total	0.737	4.10	Agree						

Source: Written by the researcher from analysis results

Table No. (12) K2 test for significance differences for second hypothetical statements

Table No. (12) K2 test for significance differences for second hypothetical statements			
Statements	K2 Value	Abstract level	Sig.
1. Using financial percentages contributes in predicting financial default in the bank	176.4	0.000	Accepted
2. The accounting information systems outputs help the banking management to be sure of the extent of funding policy competence which contributes in limiting its risks	179.2	0.000	Accepted
3. The accounting information systems periodically disclose liquidity position in bank which helps in limiting bank funding risks	141.7	0.000	Accepted
4. The accounting information systems periodically disclose the extent of capital competency in limiting funding risks.	112.4	0.000	Accepted
5. The accounting information systems contribute in following up the funding activity performance and explaining the extent of deviation about the specified plan which helps in limiting of funding risks	99.2	0.000	Accepted
6. The accounting information systems provide data about the extent of the established guarantees matching with the awarded loans which contributes in limiting of bank funding risks		0.000	Accepted
7. The accounting information systems provide losses indicator in loans to total loans which helps in controlling of bank funding risks and limiting them.	167.7	0.000	Accepted
8. Accounting information systems that observing any changes in doubtful debts percentage to total loans which helps in reducing bank funding risks and limiting the possibility of its occurrence	96.2	0.000	Accepted
9. The percentage of net bad debts to the awarded loans helps risks management and credit management to control the quality of credit which helps in reducing its associated risks	102.8	0.000	Accepted
10. Raising of property rights percentage to risky assets indicates to the ability of the bank to control funding risks and limiting its occurrence in future	91.5	0.000	Accepted
11. The accounting information systems provide funding risks management by the changes in total percentage of loans to the assets which contributes in reducing bank funding risks	157.5	0.000	Accepted
12. The accounting information systems are characterized by flexibility where it reflects any modifications in funding policies and doubtful debts allocation which contributes in reducing bank funding risks	122.9	0.000	Accepted
13. The accounting information systems periodically provide necessary data about the awarded loans, their age in taking rational decisions reduce funding risks.	113.3	0.000	Accepted
14. The accounting information systems provide data about concentrations that exceeding from specified percentages from capital base for the bank which contributes in reducing funding risks.	96.9	0.000	Accepted
15. Accounting information systems provide periodical data about distribution of loans wallet to different sectors which helps in reducing bank funding risks.	97.6	0.000	Accepted
Total	128.8	0.000	Accepted
	•	•	

Source: written by the researcher using the outputs of statistical analysis results

### Table No. (11) states the following:

1. All statements which are statements of (second study hypothesis) pivot their mean increases from hypothetical mean (3), and this result indicates to sample individuals agreeing on all first pivot statements that measure (second hypothesis statements).

2. The most important statement of (second study hypothesis) pivot is a statement of (the accounting information systems periodically provide necessary data about the awarded loans, their age and benefits which helps in taking rational decisions that reducing funding risks) where the mean of sample individuals' answers on the statement was (4.22) by

standard deviation of (0.672), followed in second rank by the statement of (Using financial percentages contributes in predicting financial default in the bank) where its mean was (4.20) by standard deviation of (0.761).

- 3. And less statement in terms of agreement is the statement of (Raising of property rights percentage to risky assets indicates to the ability of the bank to control funding risks and limiting its occurrence in future) where the statement mean was (4.01) by standard deviation of (0.773).
- 4. Moreover, mean of all statements was (4.10) by standard deviation of (0.737), this indicates to that most of sample individuals agree on all statements of second study hypothesis pivot.

# Thirdly: Testing the differences for hypothetical statements:

To test the availability of statistical significance differences between the numbers of agree, neutral and disagree individuals for the above mentioned results  $(K^2)$  has been used for differences significance. The following is a table stating descriptive analysis results for the hypothetical statements.

### Table No. (12) states the following:

- 1. (K2) value for first statement was (176.04) with abstract level of (0.000), and this value is less than abstract level of (5%); therefore, this indicates that there are statistical significance differences between sample individuals' answers in favor of those extremely agree on that using of financial percentages contributes in predicting financial default in the bank.
- 2. (K2) value for the second statement was (179.2) with abstract level of (0.000), and this value is less than abstract level of (5%); therefore, this indicates that there are statistical significance differences between sample individuals' answers in favor of those who agree on that the accounting information systems outputs help the banking management to be sure of the extent of funding policy competence which contributes in limiting its risks.
- 3. (K2) value for the third statement was (141.04) with abstract level of (0.000), and this value is less than abstract level of (5%); therefore, this indicates that there are statistical significance differences between sample individuals' answers in favor of those who agree on that the accounting information systems periodically disclose liquidity position in bank which helps in limiting bank funding risks.
- 4. (K2) value for the fourth statement was (112.4) with abstract level of (0.000), and this value is less than abstract level of (5%); therefore, this indicates that there are statistical significance differences between sample individuals' answers in favor of those who agree on that The accounting

information systems periodically disclose the extent of capital competency in limiting funding risks.

- 5. (K2) value for the fifth statement was (99.2) with abstract level of (0.000), and this value is less than abstract level of (5%); therefore, this indicates that there are statistical significance differences between sample individuals' answers in favor of those who agree on that the accounting information systems contribute in following up the funding activity performance and explaining the extent of deviation about the specified plan which helps in limiting of funding risks.
- 6. (K2) value for the sixth statement was (177.6) with abstract level of (0.000), and this value is less than abstract level of (5%); therefore, this indicates that there are statistical significance differences between sample individuals' answers in favor of those who agree on that the accounting information systems provide data about the extent of the established guarantees matching with the awarded loans which contributes in limiting of bank funding risks.
- 7. (K2) value for the seventh statement was (102.8) with abstract level of (0.000), and this value is less than abstract level of (5%); therefore, this indicates that there are statistical significance differences between sample individuals' answers in favor of those who agree on that the accounting information systems provide losses indicator in loans to total loans which helps in controlling of bank funding risks and limiting them.
- 8. (K2) value for the eighth statement was (167.7) with abstract level of (0.000), and this value is less than abstract level of (5%); therefore, this indicates that there are statistical significance differences between sample individuals' answers in favor of those who agree on that Accounting information systems that observing any changes in doubtful debts percentage to total loans which helps in reducing bank funding risks and limiting the possibility of its occurrence.
- 9. (K2) value for the ninth statement was (96.2) with abstract level of (0.000), and this value is less than abstract level of (5%); therefore, this indicates that there are statistical significance differences between sample individuals' answers in favor of those who agree on that the percentage of net bad debts to the awarded loans helps risks management and credit management to control the quality of credit which helps in reducing its associated risks.
- 10. (K2) value for the ninth statement was (91.5) with abstract level of (0.000), and this value is less than abstract level of (5%); therefore, this indicates that there are statistical significance differences between sample individuals' answers in favor of those who agree on that raising of property rights percentage

to risky assets indicates to the ability of the bank to control funding risks and limiting its occurrence in future.

- 11. (K2) value for the ninth statement was (91.5) with abstract level of (0.000), and this value is less than abstract level of (5%); therefore, this indicates that there are statistical significance differences between sample individuals' answers in favor of those who agree on that the accounting information systems provide funding risks management by the changes in total percentage of loans to the assets which contributes in reducing bank funding risks.
- 12. (K2) value for the ninth statement was (157.5) with abstract level of (0.000), and this value is less than abstract level of (5%); therefore, this indicates that there are statistical significance differences between sample individuals' answers in favor of those who agree on that the accounting information systems are characterized by flexibility where it reflects any modifications in funding policies and doubtful debts allocation which contributes in reducing bank funding risks.
- 13. (K2) value for the ninth statement was (122.9) with abstract level of (0.000), and this value is less than abstract level of (5%); therefore, this indicates that there are statistical significance differences between sample individuals' answers in favor of those who agree on that the accounting information systems periodically provide necessary data about the awarded loans, their age in taking rational decisions reduce funding risks.
- 14. (K2) value for the ninth statement was (123.3) with abstract level of (0.000), and this value is less than abstract level of (5%); therefore, this indicates that there are statistical significance differences between sample individuals' answers in favor of those who agree on that the accounting information systems provide data about concentrations that exceeding from specified percentages from capital base for the bank which contributes in reducing funding risks.
- 15. (K2) value for the ninth statement was (96.9) with abstract level of (0.000), and this value is less than abstract level of (5%); therefore, this indicates that there are statistical significance differences between sample individuals' answers in favor of those who agree on that the accounting information systems provide periodical data about distribution of loans wallet to different sectors which helps in reducing bank funding risks.
- 16. (K2) value for all second hypothesis statements was (128.8) with abstract level of (0.000), and this value is less than abstract level of (5%); therefore, this indicates that there are statistical significance differences between sample individuals'

answers in favor of those who agree on what have been mentioned in all statements of first hypothesis.

From the above mentioned, we conclude that the second study hypothesis which was (the accounting information systems help in reducing bank funding risks) its validity has been assured in all hypothesis statements by agreement percentage of (83.1%).

# Results and recommendations: First results:

- 1. Accounting information systems contribute in convening appropriate accounting information to the banking administration in suitable time for taking decisions in required accuracy which has reduced from the possibility of funding risks occurrence.
- 2. Accounting information systems helped in what it provides from indicators and financial percentages in predicting funding risks that threatening the banking.
- 3. Accounting information systems provided necessary data about the awarded loans, their age and benefits which helped in taking rational decisions and reducing funding risks.
- 4. Abiding by bank regulations and laws when awarding the fund prevents the bank from bank funding.
- 5. The banking administration cannot follow up the risks level without having in place accounting information systems that characterize by full disclosure about these risks which enabling them from its observation and then managing them and limiting the possibilities of its occurrence.
- 6. Early detection about funding risks helped in limiting its negative impacts on the bank.

### **Second: Recommendations**

- 1. There should be a preventative program that consists of a number of observational guidelines and procedures to be upgraded periodically in order to control the suspected operations from the beginning.
- 2. It is necessary to keep pace with international criteria that imposed by the international organizations and institutions besides development of bank funding policies.
- 3. Establishing specialized credential management to follow up the processes of credit awarding and to be checkup the default debts.
- 4. The need for constant improvement for accounting information systems in the banks in order to be able to keep pace with technological developments in financial and accounting field which contributes in limiting the risks of banking funding.
- 5. Developing Human resources in the bank in the fields of financial analysis, management of banking risks, training, and developing their capabilities in order to apply more advanced methods in measurement of banking funding risks.

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