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ROLE OF FINANCIAL INNOVATION IN INCREASING THE EFFICIENCY OF FINANCIAL PERFORMANCE OF BANKS (FIELD STUDY ON ANIMAL RESOURCE BANK)

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ABSTRACT

This study aimed to highlights the concept of financial innovation and shows its advantages; Study the relationship between financial innovation and financial performance of the banks. The study found that, the use of the risk forecasting strategy contributes to raising the efficiency of banks financial performance and also found that the use of options contracts contributes to raising the efficiency to financial of banks financial performance. The study recommended to encourage banks to get benefit from the innovative financial tools offered by financial engineering, in addition to increase awareness of the concept of financial innovation and its multiple advantages through holding seminars, seminars and training courses

Keyword: Financial innovation, Performance, efficiency.

1.INTRODUCTION

The recent global economic and technological development led to increasing the number of business organizations and its activities around the world and therefore, impacted the performance of financial markets and its participants. Thus, high need of new approach of financial transactions in the financial markets emerged, and that led to emergence of financial engineering concept which adopts innovating new financial instrument and methods that can be used to facilitate the financial transactions in the financial markets and other financial and financial institutions. Thus, the financial innovations led to increase the financial performance of the banks in general, and financial performance of the banks specifically.

And because the banking sector in Sudan involved in global banking system and exactly meant by any international financial development in banking sector, this study come to investigate the role of financial innovation in increasing the efficiency of financial performance of the banks.

Statement of research problem

The problem of study represented in the lack of interest of some Sudanese banks in the concept of financial innovation as a result of financial engineering and the role that it my play in increasing the efficiency of financial performance of financial markets and financial institutions in general, and financial performance of the banks specifically. Therefore, the problem of the study can be formulated in the following questions:

Q1. Does innovating new solutions to address financial problems contributes in increasing efficiency of financial performance of the banks?

Q2. Do innovating new financial products contribute in increasing efficiency of financial performance of the banks?

Importance of the study

The scientific importance of this study assimilates in the fact that its considered to be one of few studies, if not the first one, that investigate the impact of financial innovation on financial performance of the banks in Sudan. Thus, the study add new and very important information's about financial innovations to academic libraries in Sudan and therefore the researchers and students can get advantages from. While practical importance represented in showing how to get benefit from using new innovative financial instruments in financial performance in the banks.

Objectives of the study

The study aimed to achieve the following objectives:

a. Highlights the concept of financial innovation and shows its advantages.

b. Study the extent of Sudanese banking sector's interest in financial innovation.

c. Study the relationship between financial innovation and financial performance of the banks.

d.Encourage adopting innovated financial instruments in financial transactions in financial market to get benefit from its advance financial characteristics in achieving the objectives of both parties of financial transaction.

e. Improving the financial performance of banks and opening up new financial markets.

Hypotheses of the study

To achieve the objectives of the study, the following hypotheses were tested:

H1. Innovating new solutions to address financial problems contributes in increasing efficiency of financial performance of the banks.

H2. Innovating new financial products contribute in increasing efficiency of financial performance of the banks.

Sources of data collection

The initial source of this study's data is the questionnaire, while the secondary sources are references, periodicals, previous studies related to the research subject and internet.

Methodology of the study

The study adopted inductive approach to find the problem of the study and to formulate the hypotheses, historical approach to study previous literatures related to the study's subjects and analytical descriptive approach in writing its methodological framework, hypotheses testing and concluded the study's results and recommendations.

Limits of the study

Spatial limits of this study are Animal resource bank in Khartoum, while the time limit is the year 2018.

2. PREVIOUS STUDIES REVIEW

There are many previous studies that some researchers investigated through it the concept of financial innovations and its importance and advantages while others discussed the financial and financial performance of banks and factors affects it. For the purpose of this study researches will show some of these studies.

The study of Cherotich, (2014), examined the effect of financial innovations on financial performance of commercial banks in Kenya. The objective of this study was to establish the effect of financial innovations on financial performance of commercial banks in Kenya. The study found out that there is a strong relationship between financial innovations and financial performance. The value of the cheques cleared, the value of EFTs cleared and the value of the RTGS transfer explains 92.8% of the variability in the financial performance of the commercial banks where a unit increase in the RTGS transfers results to 2.945 times increase in the bank's financial performance.

The study of Saif, (2014), examined financial performance of the commercial banks in the kingdom of Saudi Arabia. The study aimed to investigate the financial performances of Saudi commercial banks during the period 2000-2013, and to fill-in this gap in the literature. The study found that at the pool level, that capital adequacy, operational efficiency operational efficiency, bank size, net loan to total deposits, liquid assets to total assets, have positive and significant relationship with Return on Asset but asset quality has negative and significant relationship with Return on Asset.

The study of Herguner, (2015), examined the financial innovations in developing countries. The primary aim of this thesis is to investigate two cases of financial innovation in Turkey, and also aimed to fulfill the gap related to financial innovations in developing countries in the literature. The study found that Turkish financial market, unlike its advanced counterparts, is dominated by commercial deposit banks which offer all types of banking and financial services, and the classical and traditional structures of a financial market did not cease to exist for Turkey.

The study of Muthinja, (2016), examined the relationship between financial innovation and financial performance of commercial banks in Kenya, as well as the drivers of financial innovations at both firm and macro levels. The main objective of the study is to establish the link between financial innovations usage and bank performance in Kenya. The study makes a number of other findings. Firstly, financial innovations significantly contribute to firm financial performance and that firm-specific factors are more important to the firm's current financial performance than industry factors. Secondly, firm-specific variables significantly drive financial innovations at firm level with firm size being the most significant driver of financial innovation at firm level.

From reviewing the previous studies, researcher concluded that, some of the studies investigated the effect of financial innovations on financial performance of commercial banks and concentrated on study the relationship between two variables, another investigated only financial performance of the commercial banks, while another study examined financial innovations in developing countries, and another one concentrated in examined. Therefore, the current study of researchers concentrates on examining the role of financial innovation on increasing the efficiency of financial performance of Sudanese banks.

3.THEORETICAL FRAMEWORK OF FINANCIAL INNOVATION

3.1 History of financial innovation

The financial innovations have had a long history of evolution. We can simplify it and say that any financial instruments (besides traditional shares and straight bonds), any financial institutions (besides traditional banks) and any financial markets (besides the traditional markets for the straight bonds and shares), for a certain period of time, can be classified as financial innovations. In the 17th and the 18th century the new financial instruments – debt contracts together with high liquid markets were introduced to gather capital required to finance the oceanic expedition and trading voyage. Then, in the 19th century the investment banks together with the new accounting methods were established to evaluate the profitability of railroad companies and to provide them sources of funds. Next, in the 20th century, the private equity companies emerged to analyze and finance high-tech investment project. At the beginning of the 21st century, the new form of investment companies are evolving - the pharmaceutical corporations analyzing and funding the bio-tech innovative solutions, These are only a few examples of the new financial developments and their evolution, proving to be essential for the technological and economic progress. Thus, financial innovations are not an entirely new issue. However their importance has increased recently, as since the mid-1990's the acceleration in the pace and range of financial innovations has been observed. (Llewellyn, 1992)

Definitions and meaning of financial innovation

Innovation is an essential element for economic progress of a country and competitiveness of an industry (Beaver, 2002), innovation is one of the most important competitive weapons and generally seen as a firm score value capability, innovation is also considered as an effective way to improve firm s productivity due to the resource constraint issue facing a firm (Lumpkin and Dess, 1996). Innovations producing incremental change bring in new elements or new versions of technologies currently existing.(Baker, 2011).

The definitions of financial innovation derive from real sector innovation, especially one comes forward which distinguishes between product and process innovations. Product innovation is defined as the introduction of a new product, or a significant qualitative change in an existing product. In addition, process innovation is defined as the introduction of a new process for making or delivering goods and services. Both types of innovations are expected to yield higher value added for the economy, financial Innovation involves the design, the development, and the implementation of innovative financial instruments and processes, and the formulation of creative solutions to problems in finance. http://www.psu.edu/viewdoc/download?

Financial innovation can be defined as the act of creating and then popularizing new financial instruments as well as new financial technologies, institutions and markets, It includes institutional, product and process innovation. https://www.google.com/search

Based on above definitions, the researchers can define financial innovation as a process of creating new financial instruments or financial products which can be derived from the traditional instrument to facilitate financial and financial transactions in banks or even in financial markets.

Emergence of Financial Innovations

There are a wide variety of explanations from the literature on why financial innovations exist in

the first place. The motive of profit maximization and the importance of participant demand were considered as two important factors behind the existence of financial innovations. Achieving efficiency by the help of cost minimization has considered being a fundamental factor, which can only be attained by innovativeness. In this vein, some writer asserts that the basic economic behavior of profit seeking is the main reason behind financial innovations, that the presence of new potential profits creates the incentives to innovate and they can be attained, for example, by reductions in costs, i.e. by technological improvements(Flood, 1992), While others argue that: Initially, there is a presence of strong demand from investors for safer patterns of cash flows, and this feature is the same for all financial innovation cycles.(Gennaioli, et. al., 2012) Then, investors demand more as the available products in the market remains inadequate for future transactions (Herguner, 2015). In general, there are six reasons behind the existence of financial innovations up to now is volatility in macroeconomic conditions, regulatory and firm-based constraints, technological advancements, incomplete markets and information asymmetries, competitiveness and the structure of the market, and hedging and diversifying risks (Tufano, 2003)

Based on above points, researchers concluded that there are many reasons led to emergence of financial innovations and it can be summarized in a technological and economic development.

The main characteristics of financial innovations

Financial innovations' product characterized by the following characteristics: (Griliches, Himmelberg, 1995)

a. They can be entirely new solutions or just traditional instruments in which new elements of construction have been introduced improving their liquidity and increasing the number of their potential applications as they are better suited to the circumstances of the time.

b. They can be used as substitutes to the traditional financial instruments improving the financial situation of the business entities using them,

c. They cannot be easily assigned to one particular segment of the financial market.

d. They can be used to hedge against the intensive volatility of the market parameters.

e. They can be used in a form of complex instruments including several simple, traditional financial instruments.

f. They can be used in a form of new financial processes or techniques or new strategies that primary use these new products.

It is clear for researchers that most important characteristic of financial innovation is that it can be used to hedge against the intensive volatility of the market parameters and this way it can help in satisfying the need of all parties in financial contact.

Types of financial Innovations

Financial innovation enhances sustainability of institutions and their outreach to the poor. A useful distinction between different types of financial innovations include: (OECD, 1997)

a. Financial system/institutional innovations: Such innovations can affect the financial sector as a whole, relate to changes in business structures, to the establishment of new types of financial Intermediaries, or to changes in the legal and supervisory framework. Important examples include the use of the group mechanism to retail financial services, formalizing informal finance systems, reducing the access barriers for women, or setting up a completely new service

structure.
b. Process innovations: Such innovations cover the introduction of new business processes leading to increased efficiency, market expansion, etc. Examples include office automation and use of computers with accounting and client data management software.
c. Product innovations: Such innovations include the introduction of new credit, deposit, insurance, leasing, hire purchase, and other financial products. Product innovations are introduced to respond better to changes in market demand or to improve the efficiency of.
d. The instrument innovations and the post-contract innovations: In case of the first type, a new instrument is designed and created with a purpose to achieve a particular set of characteristics (so they can be described as the ex-ante innovations). In the second type of innovations – the risk characteristics is changed after the original instrument is used (so they can be defined as the ex-post innovations).
The researchers concludes these types of financial innovation are making sure the output or the any innovation is create with all the changes that must be made better use in any instruments or any system and for any organization.

Advantages and disadvantages of Financial Innovation
Innovation in financial services is no exception to the rule that every silver lining has a cloud. I believe that it has done considerably more good than harm, but it has undeniably caused damage. The intertwining of benefit and harm means that any assessment of financial innovation will necessarily be subjective. First, there is no clear, objective way of balancing the good and the bad. Think again of automobiles. One could conceivably believe that the deaths and the pollution outweighed the economic and societal gains, although this would clearly be a minority view. Second, it is exceedingly hard to measure the effects of financial innovation. For example, most analysts would agree that financial innovation helped cause the recent terrible financial crisis, but its culpability ranges from secondary to severe, depending on one's theory of why the crisis happened and how it evolved. http://www.brookings.edu/opinions
A further complication is that "financial innovation" is not monolithic. Careful observers accept that some financial innovations are good, like the invention of the ATM that was praised even by Paul Volcker. Other innovations, like the late and unlamented Structured Investment Vehicles (SIV's), are bad. The real trick is listing and evaluating the major innovations and determining the balance of the good and the bad
For researchers, the most important advantage of financial innovation is that, innovated financial instruments or products will add value to the business concerned, and it also protect financial resources from disperse or loss.

Adoption of finical innovation
The adoption and usage of certain types of innovations is influenced by the human behavior and individual's perceptions in regard to the risk of adopting innovations. For instance many users of internet banking fear that the limited interaction they have with banking staff exposes them to the risk of fraud involving the customers' bank accounts. In their study of adopters and non-adopters of internet banking, Patriotism, It is observed that majority place a premium on human interaction accorded by the bank staff and is concerned with risk inherent in internet banking and

lack of pre-adoption trial (Hughes, and Lonie). Additionally, a recent study posit that firstly, individual expectations with regard to expected performance, effort expectancy, perceived risks and social influence significantly explain usage of internet banking. Secondly, users' intentions, facilitating conditions are not significant in explaining the usage (Martins, et. al., 2014).
The researchers concluded that, adoption of any type of new financial innovated instruments depends on the desires of decisions makers on financial institutions and the objectives that they intend to achieve from.

4.Financial performance of Banks

Bank performance is the outcomes achieved in meeting internal and external goals of a bank (Lin, et. al., 2008). Financial performance is a measure of how well a bank can use assets from its primary mode of business and generate revenues, This term is also used as a general measure of bank's overall financial health over a given period of time, and can be used to compare similar firms across the same industry or to compare industries or sectors in aggregation. There are many different ways to measure financial performance, but all measures should be taken in aggregation. Line items such as revenue from operations, operating income or cash flow from operations can be used, as well as total unit sales. http://www.businessdictionary.com
Researcher can define financial as financial process through which a bank or a financial institution as an investor can provide money, financial instruments or products to the borrowers when need it for reinvestment to achieve specific purposes and pay the money back to the lenders with specified previously agreed rate of interest.

Definition of bank

A bank defined as a financial institution that accepts deposits from the public and creates credit. Lending activities can be performed either directly or indirectly through capital markets. Due to their importance in the financial stability of a country, banks are highly regulated in most countries. Most nations have institutionalized a system known as fractional reserve banking under which banks hold liquid assets equal to only a portion of their current liabilities. http://www.en.wikipedia.org/wiki, it is also defined as a financial institution licensed to receive deposits and make loans. Banks may also provide financial services, such as wealth management, currency exchange and safe deposit boxes. There are two types of banks: commercial/retail banks and investment banks. In most countries, banks are regulated by the national government or central bank.
The researchers can define bank as financial institution that found to help different types of peoples and firms to save the financial resources by deposit their money into bank, and provides them by funds for investment when they need it.

Concept of Performance

Performance is the execution or accomplishment of work feats etc. or a particular, action, deed or proceeding is refers as performance. However, the manner in which or the efficiency with which something reacts or fulfills its intended purpose is defined as performance. Performance may thus, mean different things to different businesses. Success or failure in the economic sense is judged in relation to expectations, return on invested capital and the objective of the business

concern. In understanding the term performance, a clear distinction needs to be drawn between Performance Measures and Performance Indicators. Performance measures need to be based on cat evaluation of the causes and effects of policy intervention whereas a performance indicator is less precise and usually provides only intermediate measure of achievement. (Muthinja, 2016)
Researchers can define performance as a process of looking at how the tasks are going throughout the supervisors.

Financial Efficiency

Financial Efficiency is a measure of the organization's ability to translate its financial resources into mission related activities. Financial Efficiency is desirable in all organizations regardless of individual mission or structure. It measures the intensity with which a business uses its assets to generate gross revenues and the effectiveness of producing, purchasing, pricing, financial and marketing decisions. At the micro level, Financial Efficiency refers to the efficiency with which resources are correctly allocated among competing uses at a point of time. Financial Efficiency is a measure of how well an organization has managed certain tradeoffs (risk and return, liquidity and profitability) in the use of its financial resources. Financial Efficiency is regarded efficiency and is a management guide to greater efficiency the extent of profitability, productivity, liquidity and capital strength can be taken as a final proof of financial efficiency. It is interesting to note that sometimes, even sufficient profits can mask inefficiency and conversely. http://www.businessdictionary.com
For researchers financial efficiency is how you can manage your financial stuff like liquidity or profit in efficient way so you are not involve in any risk.

Efficiency Ratios for Banks

The efficiency ratio is typically used to analyze how well a company uses its assets and liabilities internally. An efficiency ratio can calculate the turnover of receivables, the repayment of liabilities, the quantity and usage of equity, and the general use of inventory and machinery. This ratio can also be used to track and analyze the performance of commercial and investment banks. The efficiency ratio also applies to banks. For example, a bank efficiency ratio measures a bank's overhead as a percentage of its revenue. Like the efficiency ratios above, this allows analysts to assess the performance of commercial and investment banks. For a bank, an efficiency ratio is an easy way to measure the ability to turn assets into revenue. Since a bank's operating expenses are in the numerator and its revenue is in the denominator, a lower efficiency ratio means that a bank is operating better. I have believed that a ratio of 50% is the maximum optimal efficiency ratio. If the efficiency ratio increases, it means a bank's expenses are increasing or its revenues are decreasing. http://www.investopedia.com

The researchers see that, it is highly important to calculate the efficiency ratio of the banks, because such ratio helps in determining the level of financial and financial performance of the banks and therefore contributes in rationalizing financial decisions of the banks' management.

The impact of Financial Innovations on financial Performance of the banks
Studies from the early period of research on innovation have typically reported a positive

relationship between innovation and measures of firm performance. In a new generation of models studying the impact of innovative activities on firm performance, the focus has shifted to the complex innovation process and channels through which the innovation inputs are transformed into better performance (Loof, et. al., 2006). As revealed in many studies, financial innovation and firm financial performance have a positive relationship, Innovation would appear in product, process, market, factor and organization, but the first three dimensions are more familiar in the innovation literature (Otero-Neira, et. al., 2009).

Innovation generally does seem to have positive effects in raising financial performance of innovators (Boot & Thakor, 2007), Most studies have reported a positive relationship between innovation and firm performance, they tests the existence of a positive relationship between the innovation output measured by sales of new products per employee and five different measures of firm performance (employment growth, value added per employee, sales per employee, operating profit per employee and return on assets). A positive relationship was confirmed for all five indicators. However, not all studies have confirmed the existence of this relationship (Loof, et. al., 2006). Some studies find that the impact of innovation output on the firm performance appears to be contemporaneous when performance is measured by market value but it occurs with a lag when performance is measured by productivity (Herguner, 2015).

Another researchers in their study on Dynamics of Financial Innovation and Performance of Banking Firms: Context of an Emerging Banking Industry, analyzed the effect of the adoption of two types of financial innovations namely; product innovation (telephone banking and SMS banking etc) and process innovation (Magnetic strip card, debit, ATM and credit card), Automatic cash dispenser; (Automatic teller machine; Electronic payment terminal etc) on the performance of banks. Their analysis included two adoption behaviours, first mover in adoption of the financial innovation and imitator of the first movers. They found out that first mover initiative in product innovation improves profitability while process initiative has a positive effect on profitability and efficiency. Banks that imitate are less profitable and less efficient than first movers (Mabrouk and Mamoghli, 2010).

5.Field study

Field study procedures

The researchers discuss the method and procedures followed in the implementation of the study. This includes a description of the study community, the sample of the study, the method of preparing its tools, and the statistical methods used to test the hypothesis of the study. The study community is the total group of elements that the researcher seeks to generalize the results related to the problem. The study community consists of all concerned the role of financial innovation in increasing the efficiency of financial performance of banks, specifically Animal Resources Bank in Sudan.

The study's sample: The sample of the study was determined according to its scientific specifications that achieve the objectives of the study from the internal auditor, external auditor, accountant, risk office, investment officer, head of department, to achieve the purpose of the study.

Data collection: A total of (50) forms were distributed on the pre-defined and targeted sample to verify the hypotheses of the study. A total of (50) forms were collected for analysis,

(100%), To produce accurate results and disseminate them to the study community, the researchers are keen to vary the sample of the study in terms of its coverage on the following:
a. Individuals of different years of age (less than 30 years, 30 years and less than 35 years, 35 years and less than 40 years, more than 40 years).
b. Individuals with different qualifications (BSc, High Diploma, Master, PhD, Other).

c. Individuals from different scientific disciplines (accounting, financial and banking studies, business administration, accounting information systems, economics, other.).
d. Individuals of various functional occupations (internal auditor, external auditor, accountant, risk office, investment officer, department head, other).
e. Individuals of different years of experience (less than 5 years, 5 years and less than 10 years, 10 years and less than 15 years, 15 years and less than 20 years, more than 20 years).
Tools of the study: The tools of the study are the means used by the researcher to collect the necessary data on the phenomenon studied. There are many tools used in the field of scientific research to obtain the necessary information and data. The researcher adopted the questionnaire as a main tool for collecting data from the study sample:

a. Applicable for information from a number of individuals.

b. Low cost and easy to apply.

c. Easy to develop questions and answer questions and answer questions. d. The questionnaire provides time for the respondent and gives him an opportunity to think.
e. Respondents in the questionnaire feel free to express opinions they fear others disagree with.

Stability and truthfulness Study tools:

a. Stability and Virtual Honesty: In order to ascertain the veracity of the questionnaires, the researcher presented the questionnaire to a number of academic arbitrators and specialists in the field of study. After the questionnaire was retrieved from the arbitrators, the proposed amendments were made. Stability and statistical honesty: The consistency of the test means that the scale gives the same results if used once under similar conditions. Stability means that if a test is applied to a group of individuals and their scores are monitored, then the same test is applied to the same group and the scores are obtained, the test is perfectly stable, also known as the accuracy and consistency of the measurements obtained from the test. The most commonly used methods for estimating the stability of a scale are (Half-way distribution using the Spearman-Brown formula, Alpha-Cronbach method, Method of re-application of the test).
Honesty is a measure used to determine the degree of honesty among respondents through their answers to a given scale.

b. Use a questionnaire for survey sample:
The questionnaire was distributed to a sample of (5) individuals from the research community and from outside the research sample in accordance with their characteristics with the sample of

the study to calculate the stability factor, to determine the degree of response of the respondents to the questionnaire and to identify ambiguous questions and to provide preliminary testing of hypotheses and to clarify some design and methodological problems. The stability test for the questionnaire was conducted using the alpha-Cronbach coefficient and the result was 0.873. This means that the data is stable as shown in Table (1) below:

Table (1): Alpha Kronbach coefficient of the questionnaire

Number	Axis	Number of ferries	Stability(constancy)
1	first hypothesis	5	0.791
2	second hypothesis	5	0.851
	Total	10	0.873

Source: Researchers, 2018.

The above table shows that the Kronbach coefficient for all the terms of the questionnaire is 0.873, which is high and the reference to the terms of the questionnaire is that the increase in the value of the Cronbach coefficient means increasing the credibility of the data. This means that the measure measures what is measured.
Used Statistical methods: To achieve the objectives of the study and to verify its hypotheses, the statistical methods used are (Graphs, Frequency distribution of responses, Percentages, Spearman-Brown equation to calculate the coefficient of stability, Arithmetic mean, standard deviation and variance and chi - square test to denote hypotheses).

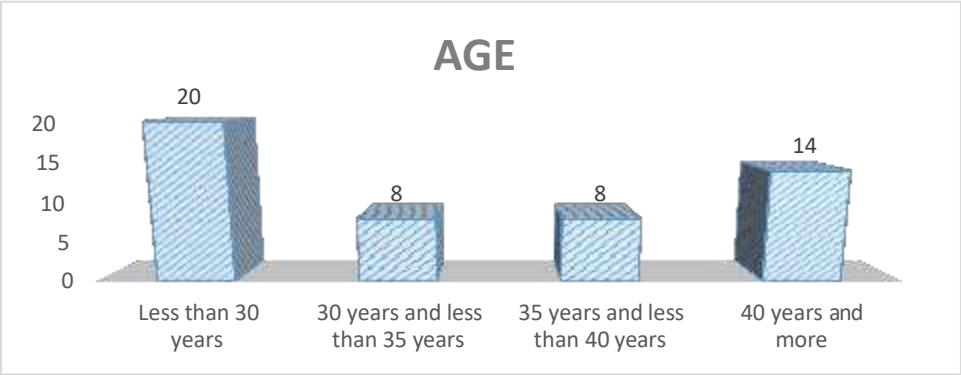
Data analysis and hypothesis testing
The researcher analyzed personal data, questionnaire data and tested the hypotheses of the study using statistical methods and graphs. In addition, a comparison is made between the most important results of the field study and the results of the previous studies, as follows:
Personal data
a.Age:

Table (2): Frequency and percentages of study sample members according to the variable of age

Age	Number	Percentage
Less than 30 years	20	%40
30 years and less than 35 years	8	%16
35 years and less than 40 years	8	%16
40 years and more	14	%28
Total	5o	%100

Source: prepared by researchers, based on field study's data, 2018.

Chart (1): Frequency and percentages of study sample members according to the variable of age

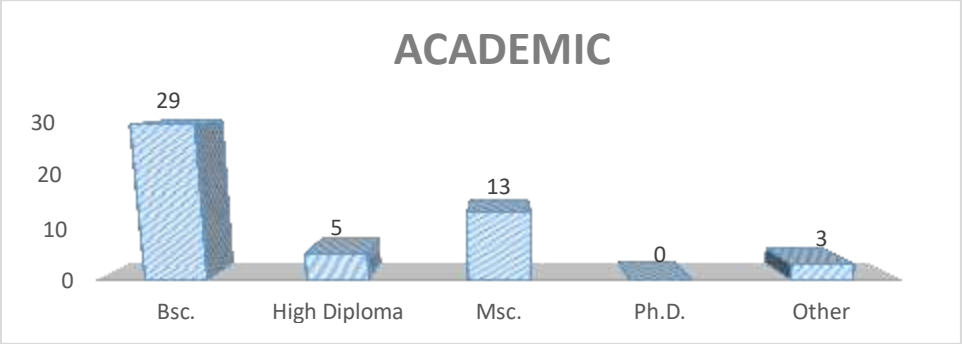


Source: prepared by researchers, based on field study's data, 2018.

Table (2) and chart (1) shows that the distribution of the sample of the study according to the age, find (20) person, and at the rate of (%40) from (less than 30 years) of the sample studied, and (8) person, and at rate of (%16) from (30 years and less than 35 years), and (8) person, and at the rate of (%16) from (35 years and less than 40 years), and (14) person, and at the rate of (%28) from (40 years and more) from the sample study.

b.Academic Qualification:

Table (3): Frequency and percentages of study sample members according to the variable of academic qualification



Source: prepared by researchers, based on field study's data, 2018.

Table (3) and chart (2) shows that the distribution of the study sample according to the academic qualification find that (29) person, and at rate of (%58) (BSc.) of the studied sample, and high diploma (5) person, and at the rate of (%10), and (MSc) find (13) person, and at the rate of (%26), and (3) person other academic qualification, and at the rate of (%6), while there non person (PHD) from the study sample.

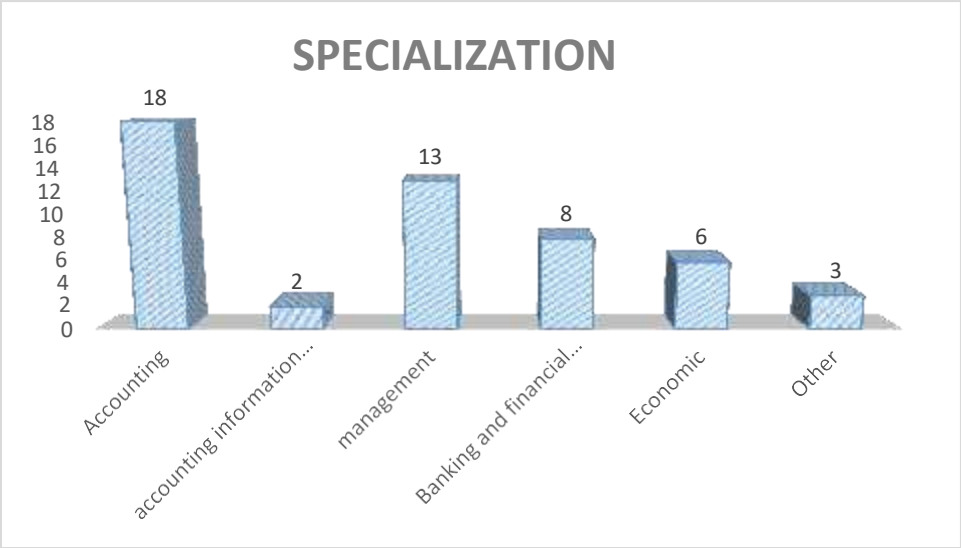
c. Scientific specialization:

Table (4): Frequency and percentages of study sample members according to the variable of scientific specialization

Scientific specialization	Number	Percentage
Accounting	18	%36
accounting information systems	2	%4
management	13	%26
Banking and financial studies	8	%16
Economic	6	%12
Other	3	%6
Total	50	%100

Source: prepared by researchers, based on field study's data, 2018.

Chart (3): Frequency and percentages of study sample members according to the variable of scientific specialization



Source: prepared by researchers, based on field study's data, 2018.

From table (4) and chart (3), The researcher noticed that the members of the sample according to the variable of scientific specialization, we find (18) person accounting specialization, and at the rate of (%36), and (8) person Banking and finance studies specialization, and at the rate of (%16), and (13) personal management, and at the rate of (%26), and (2) person accounting information systems, and at the rate of (%4), and (6) person Economic specialization, and at the rate of (%12), and (3) person other, and at the rate of (%6) from study sample.

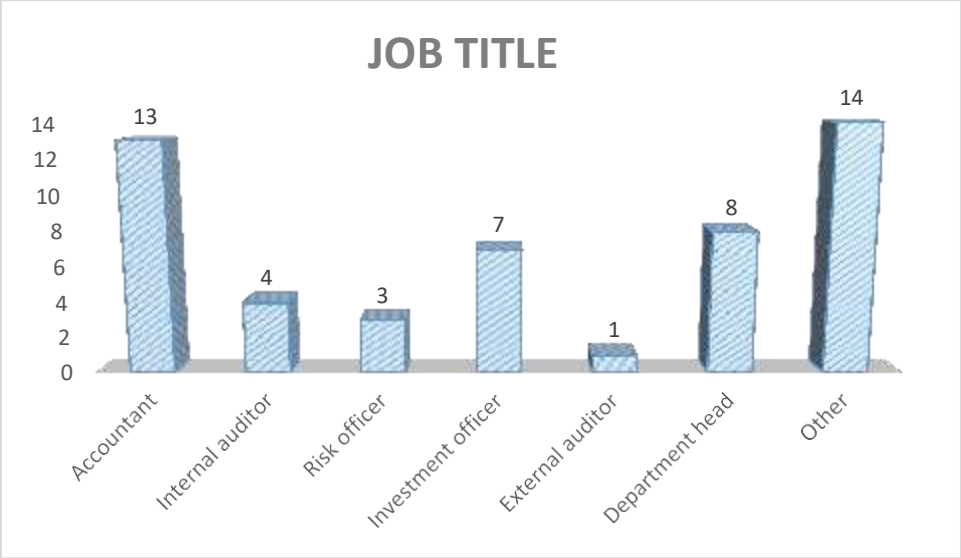
d.Job title:

Table (5): Frequency and percentages of study sample members according to variable job title

Job title	Number	Percentage
Accountant	13	%26
Internal auditor	4	%8
Risk officer	3	%6
Investment officer	7	%14
External auditor	1	%2
Department head	8	%16
Other	14	%28
Total	50	%100

Source: prepared by researchers, based on field study's data, 2018.

Chart (4) Frequency and percentages of study sample members according to the variable of job title



Source: prepared by researchers, based on field study's data, 2018.

From table (5) and chart (4),The researcher noticed that the sample members according to the variable of job title, and (13) person accountant, and at the rate of (%26), and (4) person internal auditor, and at the rate of (%8), and (3) person risk officer, and at the rate of (%6), and (7) person investment officer and in the rate of (%14), and person external auditor, and at the rate of (%2), and (8) person department head, and at the rate of (%16), While there are find (14) person other,

and at the rate of (%28) from the study sample.

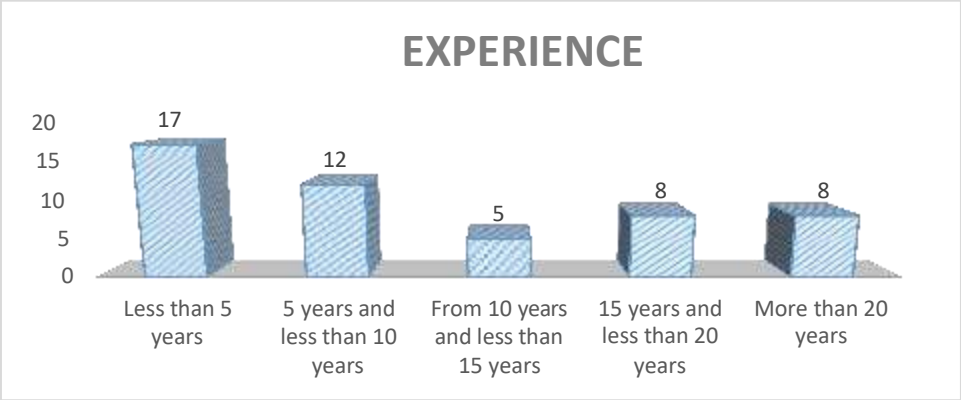
e.Years of experience:

Table (6): Frequency and percentages of the sample of the study sample according to variable of years of experience

Experience	Number	Percentage
Less than 5 years	17	%34
5 years and less than 10 years	12	%24
From 10 years and less than 15 years	5	%10
15 years and less than 20 years	8	%16
More than 20 years	8	%16
total	50	%100

Source: prepared by researchers, based on field study's data, 2018.

Chart (5): Frequency and percentages of study sample members according to the variable of experience



Source: prepared by researchers, based on field study's data, 2018.

Table (6) and chart (5) shows that the distribution of the study sample according to variable of experience years as follows:

Find (17) person and in the rate of (%34) and their experience (5 yeas less than), and (12) person and in the ate of (%24) their experience (from 5 years and less than 10 years), and (5) person and in the rate of (%10) their experience (from 10 years and less than 15 years), and (8) person and in the rate of (%16) their experience (from 15 years and less than 20 years), and (8) person and in the rate of (%16) their experience (20 years and more than) from study sample.

Analysis of the questionnaire data

The first hypothesis: Innovating new solutions to address financial problems contributes in increasing efficiency of financial performance of the banks.

Table (7): The frequency distribution of the responses of the sample members of the study for the first hypothesis phrases

No	sentences	Frequency and percentage%									
		Strongly Disagree		Disagree		Neutral		Agree		Strongly agree	
		f	p	f	p	f	p	f	P	f	p
1	The use of the risk forecasting strategy contributes to raising the efficiency of banks financial performance	2	%4	2	%4	7	%14	24	%48	15	%30
2	The increase in the special guarantees for finance applicants increases the efficiency of banks financial performance	2	%4	3	%6	8	%16	18	%36	19	%38
3	The strategy of increasing bank liquidity through short-term hedging contributes to raising the efficiency of banks financial performance	2	%4	5	%10	9	%18	22	%44	12	%24
4	The removal of regulatory policy barriers in banks contributes to raising the efficiency of banks financial performance	1	%2	5	%10	11	%22	23	%46	10	%20
5	The use of long-term hedging to finance small and medium enterprises contributes to raising the financial performance of banks	2	%4	2	%4	14	%28	20	%40	12	%24

Source: prepared by researchers, based on field study's data, 2018.

From table (7) which explains the ratios and frequencies of the hypothesis Expressions which states "Innovating new solutions to address financial problems contributes in increasing efficiency of financial performance of the banks", the researcher noticed the following:
The first phrase" The use of the risk forecasting strategy contributes to raising the efficiency of banks financial performance " We find that (39) Person agree, and At a rate of (78%) of the sample, and There is)7) person a neutral and at the rate of (14%), While there is (4) Person

Disagree, and at the rate of (8%) from the sample.
The second phrase, which states that " The increase in the special guarantees for finance applicants increases the efficiency of banks financial performance " We find that (37) person agree, and at the rate of (74%) of the sample, there is (8) person a neutral, and at the rate of (16%), While there is (5) Person Disagree, and at the rate of (10%) from the sample.
The third phrase, which states that "The strategy of increasing bank liquidity through short-term hedging contributes to raising the efficiency of banks financial performance" We find that (34) person agree, and at the rate of (68%) of the sample, while there is (9) person neutrals, and at the rate of (18%) Of the sample, While there is (7) Person Disagree, and at the rate of (14%) from the sample.
The third phrase, which states that "The removal of regulatory policy barriers in banks contributes to raising the efficiency of banks financial performance" We find that (33) person agree, and at the rate of (66%) of the sample, while the neutrals (11) person of the sample, and at the rate of (22%) Of the sample, While there is (6) Person Disagree, and at the rate of (12%) from the sample.
The third phrase, which states that "The use of long-term hedging to finance small and medium enterprises contributes to raising the financial performance of banks" We find that (32) person agree, and at the rate of (64%) of the sample, while the neutrals (14) person of the sample, and at the rate of (28%) Of the sample, While there is (4) Person Disagree, and at the rate of (4%) from the sample.

Table (8): The mean and the mode of the responses of the sample members of the study for the phrases of the first hypothesis

No	sentences	Mean	mode	Explanation
1	The use of the risk forecasting strategy contributes to raising the efficiency of banks financial performance	3.96	4	agree
2	The increase in the special guarantees for finance applicants increases the efficiency of banks financial performance	3.98	5	Strongly agree
3	The strategy of increasing bank liquidity through short-term hedging contributes to raising the efficiency of banks financial performance	3.74	4	agree
4	The removal of regulatory policy barriers in banks contributes to raising the efficiency of banks financial performance	3.72	4	agree
5	The use of long-term hedging to finance small and medium enterprises contributes to raising the financial performance of banks	3.76	4	agree

Source: prepared by researchers, based on field study's data, 2018.

From table (8), the researcher notice that the descriptive statistics of the first hypothesis terms, which states "Innovating new solutions to address financial problems contributes in increasing efficiency of financial performance of the banks", the Arithmetic mean is in the range between (3.72 - 3.98) and the mode is in the range between (4-5) According to the five-digit Likert scale, the respondents, answers are strongly agree and agree.

Table (9): Test of Chi - square for the first hypothesis

no	sentences	Chi-square	Degree of freedom	Statistical significance
1	The use of the risk forecasting strategy contributes to raising the efficiency of banks financial performance	135.553	1	.000
2	The increase in the special guarantees for finance applicants increases the efficiency of banks financial performance	120.081	2	.000
3	The strategy of increasing bank liquidity through short-term hedging contributes to raising the efficiency of banks financial performance	122.343	2	.000
4	The removal of regulatory policy barriers in banks contributes to raising the efficiency of banks financial	114.631	1	.000
	performance			
5	The use of long-term hedging to finance small and medium enterprises contributes to raising the financial performance of banks	76.338	2	.000

Source: prepared by researchers, based on field study's data, 2018.

In order to test the validity of the hypothesis, which states "Innovating new solutions to address financial problems contributes in increasing efficiency of financial performance of the banks", the chi-square test was used for the axis expressions. The values of the chi-square calculated as follows (135.553 – 120.081 – 122.343 – 114.631 – 76.338), With degrees of freedom (1-2), and with the statistical significance for all terms (0.00), When comparing the level of statistical significance with the permissible level of significance (0.05), we find that the level of statistical significance is less than the level of morale, which means there are differences of statistical

significance of the terms of the hypothesis.
From above discussion, the researcher concludes that, the first hypothesis which states "Innovating new solutions to address financial problems contributes in increasing efficiency of financial performance of the banks" have been achieved.
The second hypothesis: Innovating new financial products contribute in increasing efficiency of financial performance of the banks.

Table (10): The frequency distribution of the responses of the sample members of the study for the second hypothesis phrases

No	sentences	Frequency and percentage%									
		Strongly Disagree		disagree		neutral		Agree		Strongly agree	
		f	p	f	p	f	p	f	P	f	p
1	The use of futures contracts contributes to raising the efficiency of banks financial performance.	1	%2	4	%8	16	%32	18	%36	11	%22
2	The use of options contracts contributes to raising the efficiency to financial of banks financial performance	1	%2	1	%2	18	%36	16	%32	14	%28
3	The use of swap contracts contributes to raising the efficiency of financial performance of banks	2	%4	2	%4	12	%24	23	%46	11	%22
4	The use of forward contracts contributes to raising the efficiency of banks financial performance	1	%2	3	%6	17	%34	21	%42	8	%16
5	The use of currency exchange contract s contributes to raising the efficiency of banks financial performance	4	%8	5	%10	13	%26	16	%32	12	%24

Source: prepared by researchers, based on field study's data, 2018.

From table (0), which explains the ratios and frequencies of the hypothesis terms which states "Innovating new financial products contribute in increasing efficiency of financial performance of the banks" the researcher noticed the following:
The first phrase" The use of futures contracts contributes to raising the efficiency of banks financial performance." We find that (29) Person agree, and at the rate of (58%) of the sample, and There is)16) person a neutral, and at the rate of (32%), While there is (5) Person Disagree, and at the rate of (10%) from the sample.
The second phrase, which states that " The use of options contracts contributes to raising the efficiency to financial of banks financial performance " We find that (30) person agree, and at the rate of (60%) of the sample, there is (18) person a neutral, and at the rate of (36%), While there is (2) Person Disagree, and at the rate of (4%) from the sample.
The third phrase, which states that" The use of swap contracts contributes to raising the efficiency of financial performance of banks" We find that (34) person agree, and at the rate of (68%) of the sample, while the neutrals (12) person of the sample, and at the rate of (24%) Of the sample, While there is (4) Person Disagree, and at the rate of (8%) from the sample.
The third phrase, which states that "The use of forward contracts contributes to raising the efficiency of banks financial performance" We find that (29) person agree, and at the rate of (58%) of the sample, while the neutrals (17) person of the sample, and at the rate of (34%) Of the sample, While there is (4) Person Disagree, and at the rate of (8%) from the sample.
The third phrase, which states that "The use of currency exchange contracts contributes to raising the efficiency of banks financial performance" We find that (28) person agree, and at the rate of (56%) of the sample, while the neutrals (13) person of the sample, and at the rate of (26%) Of the sample, While there is (9) Person Disagree, and at the rate of (18%) from the sample.

Table (11): The mean and the mode of the responses of the sample members of the study for the phrases of second hypothesis

No	Sentences	Mean	Mode	Explanation
1	The use of the risk forecasting strategy contributes to raising the efficiency of banks financial performance	3.68	4	agree
2	The increase in the special guarantees for finance applicants increases the efficiency of banks financial performance	3.82	3	Agree
3	The strategy of increasing bank liquidity through short-term hedging contributes to raising the efficiency of banks financial performance	3.78	4	Agree
4	The removal of regulatory policy barriers in banks contributes to raising the efficiency of banks financial performance	3.64	4	agree

5	The use of long-term hedging to finance small and medium enterprises contributes to raising the financial performance of banks	3.54	4	agree

Source: prepared by researchers, based on field study's data, 2018.

From table (11), the researcher noticed from the descriptive statistics of the first hypothesis terms, which states "Innovating new financial products contribute in increasing efficiency of financial performance of the banks", the Arithmetic mean is in the range between (3.54 - 3.82), and the mode is in the range between (3-4), According to the five-digit Likert scale, the respondents, answers are strongly agree and agree.

Table (12): Test of Chi – square for the second hypothesis

No	Sentences	Chi-square	Degree of freedom	Statistical significance
1	The use of the risk forecasting strategy contributes to raising the efficiency of banks financial performance	127.605	1	.000
2	The increase in the special guarantees for finance applicants increases the efficiency of banks financial performance	132.961	2	.000
3	The strategy of increasing bank liquidity through short-term hedging contributes to raising the efficiency of banks financial performance	104.245	2	.000
4	The removal of regulatory policy barriers in banks contributes to raising the efficiency of banks financial performance	152.009	1	.000
5	The use of long-term hedging to finance small and medium enterprises contributes to raising the financial performance of banks	110.186	2	.000

Source: prepared by researchers, based on field study's data, 2018.

In order to test the validity of the hypothesis, which states "Innovating new financial products contribute in increasing efficiency of financial performance of the banks" the Chi-square test was used for the axis expressions. The values of the Chi-square calculated as follows (127.605 – 132.961 – 104.245 – 1542.009 – 1103.186), With degrees of freedom (1-2), and with the

statistical significance for all terms (0.00), When comparing the level of statistical significance with the permissible level of significance (0.05) we find that the level of statistical significance is less than the level of morale, which means there are differences of statistical significance of the terms of the hypothesis.
From above discussion, the researcher concludes that, the second hypothesis which states "Innovating new financial products contribute in increasing efficiency of financial performance of the banks" have been achieved.

6.THE RESULTS OF THE STUDY

After testing data analysis and hypotheses testing them each found the following results:

1.The use of the risk forecasting strategy contributes to raising the efficiency of banks financial performance.
2.The increase in the special guarantees for finance applicants increases the efficiency of banks financial performance.
3.The strategy of increasing bank liquidity through short-term hedging contributes to raising the efficiency of banks financial performance.
4.The use of swap contracts contributes to raising the efficiency of financial performance of banks.
5.The use of options contracts contributes to raising the efficiency to financial of banks financial performance.

7. RECOMMENDATIONS OF THE STUDY

1.Increase awareness of the concept of financial innovation and its multiple advantages through holding seminars, seminars and training courses.
2.Encouraging ban ks to benefit from the innovative financial tools offered by financial engineering.
3.Work on the development of new financial tools and methods to keep abreast of the huge economic and technological developments that affected the financial performance of banks.
4.The possibility of circulating the results of the study to other financial institutions other than banks.
5.Comparing between the advantages and disadvantages of financial innovation to see the best for any financial institution.

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