


THE ROLE OF ENGINEERING INSURANCE IN COMPLETING PROJECTS BY USING BANK LOANS: AN APPLIED STUDY IN A SAMPLE OF IRAQI INSURANCE COMPANIES AND BANKS

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ARTICLE INFO	ABSTRACT
<p>Article history:</p> <p>Received 14 November 2022</p> <p>Accepted 16 January 2023</p>	<p>Purpose: The aim of the study is to know the reasons for the discontinuation of engineering insurance in Iraqi insurance companies, and how to reactivate engineering insurance in project management and the benefits that bank loans can achieve to Iraqi insurance companies.</p>
<p>Keywords:</p> <p>Engineering Insurance; Management; Bank Loans.</p> <div data-bbox="172 920 480 1167" style="text-align: center;">  </div>	<p>Theoretical framework: The theoretical aspect included the definition of engineering insurance, its origins and types, the concept and characteristics of project management and bank loans and their types, as well as a statement of the role of engineering insurance in project management and the advantages of using bank loans in activating engineering insurance.</p> <p>Design/ Methodology/ Approach: The study relied on the analytical descriptive approach by using the questionnaire tool to measure the relationship between the research variables. Three government companies and a group of Iraqi banks were selected.</p> <p>Findings: The study found the correlative and influencing relationship with the dimensions of bank loans in activating the engineering insurance through the interpretation of the statistical results of the questionnaire data directed to workers in the Iraqi insurance companies.</p> <p>Research, practical and social implications: Spreading awareness about the importance of engineering insurance in encouraging investment for productive and vital projects, reducing the effects of risks associated with projects, and facilitating procedures for obtaining bank loans.</p> <p>Originality/ Value: The value of the study is to measure the relationship between the engineering insurance variable and the bank loan variable. This study has not been previously addressed by insurance companies and Iraqi banks.</p> <p>Doi: https://doi.org/10.26668/businessreview/2023.v8i1.926</p>

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O PAPEL DO SEGURO DE ENGENHARIA NA CONCLUSÃO DE PROJETOS UTILIZANDO EMPRÉSTIMOS BANCÁRIOS: UM ESTUDO APLICADO EM UMA AMOSTRA DE COMPANHIAS DE SEGUROS E BANCOS IRAQUIANOS

RESUMO

Objetivo: O objetivo do estudo é conhecer as razões para a descontinuação do seguro de engenharia nas seguradoras iraquianas, e como reativar o seguro de engenharia na gestão de projetos e os benefícios que os empréstimos bancários podem alcançar para as seguradoras iraquianas.

Estrutura teórica: O aspecto teórico incluiu a definição de seguro de engenharia, suas origens e tipos, o conceito e características do gerenciamento de projetos e empréstimos bancários e seus tipos, bem como uma declaração do papel do seguro de engenharia no gerenciamento de projetos e as vantagens de utilizar empréstimos bancários na ativação do seguro de engenharia.

Concepção/ Metodologia/ Abordagem: O estudo baseou-se na abordagem descritiva analítica, utilizando a ferramenta de questionário para medir a relação entre as variáveis da pesquisa. Três empresas governamentais e um grupo de bancos iraquianos foram selecionados.

Conclusões: O estudo encontrou a relação correlativa e influenciadora com as dimensões dos empréstimos bancários na ativação do seguro de engenharia através da interpretação dos resultados estatísticos dos dados do questionário direcionados aos trabalhadores das seguradoras iraquianas.

Pesquisa, implicações práticas e sociais: Difusão da conscientização sobre a importância do seguro de engenharia no incentivo ao investimento em projetos produtivos e viáveis, reduzindo os efeitos dos riscos associados aos projetos e facilitando os procedimentos para a obtenção de empréstimos bancários.

Originalidade/ Valor: O valor do estudo é medir a relação entre a variável do seguro de engenharia e a variável do empréstimo bancário. Este estudo não foi abordado anteriormente por companhias de seguros e bancos iraquianos.

Palavras-chave: Seguro de Engenharia, Administração, Empréstimos Bancários.

EL PAPEL DE LOS SEGUROS DE INGENIERÍA EN LA REALIZACIÓN DE PROYECTOS MEDIANTE PRÉSTAMOS BANCARIOS: ESTUDIO APLICADO EN UNA MUESTRA DE COMPAÑÍAS DE SEGUROS Y BANCOS IRAQUÍES

RESUMEN

Objetivo: El objetivo del estudio es conocer las razones de la interrupción de los seguros de ingeniería en las compañías de seguros iraquíes, y cómo reactivar los seguros de ingeniería en la gestión de proyectos y los beneficios que los préstamos bancarios pueden conseguir para las compañías de seguros iraquíes.

Marco teórico: El aspecto teórico incluía la definición del seguro de ingeniería, sus orígenes y tipos, el concepto y las características de la gestión de proyectos y los préstamos bancarios y sus tipos, así como una exposición del papel del seguro de ingeniería en la gestión de proyectos y las ventajas de utilizar préstamos bancarios para activar el seguro de ingeniería.

Diseño/ Metodología/ Enfoque: El estudio se basó en el enfoque descriptivo analítico utilizando la herramienta del cuestionario para medir la relación entre las variables de la investigación. Se seleccionaron tres empresas públicas y un grupo de bancos iraquíes.

Resultados: El estudio encontró la relación correlativa y de influencia con las dimensiones de los préstamos bancarios en la activación del seguro de ingeniería a través de la interpretación de los resultados estadísticos de los datos del cuestionario dirigido a los trabajadores de las compañías de seguros iraquíes.

Investigación, implicaciones prácticas y sociales: Difundir la importancia de los seguros de ingeniería para fomentar la inversión en proyectos productivos y viables, reducir los efectos de los riesgos asociados a los proyectos y facilitar los procedimientos para la obtención de préstamos bancarios.

Originalidad/valor: El valor del estudio es medir la relación entre la variable seguro de ingeniería y la variable préstamo bancario. Este estudio no ha sido abordado anteriormente por las compañías de seguros y los bancos iraquíes.

Palabras clave: Seguro de Ingeniería, Gestión, Préstamos Bancarios.

INTRODUCTION

Insurance in Iraq is considered one of the oldest financial markets in the Arab region after the Egyptian market. Several branches of foreign insurance companies operate in the Iraqi market, and the growth of economic activity of all kinds has increased thanks to the Iraqi market's need for insurance, which resulted in the establishment of a local insurance market, according to companies Law No. 56 for the year (1950), and due In view of the need for insurance in the Iraqi market, the reinsurance company was established by Law (21) for the year (1960) with a capital of (3) million Iraqi dinars. Iraqi laws allowed the private sector to work with insurance companies, which led to the establishment of the Baghdad National Insurance Company, which is a private shareholding company The Ministry of Finance contributed by (50%) in addition to some of the Iraqi banks, which are "Al-Rafidain, the Industrial Bank, the Agricultural Bank, the Real Estate Bank, the Commercial Bank." During these developments in the insurance sector, the capitals of companies operating in Iraq increased, which led to Regulating international relations between the Iraqi insurance market and international insurance companies, as these funds have contributed since the establishment of these companies to the sustainable economic development of Iraq.

A group of events came after the year (2003) that affected the regulation of insurance business in the Iraqi market, which led to the cessation of insurance business after the year (2015), despite the importance of insurance in providing insurance protection for projects planned in the reconstruction of Iraq.

Therefore, the topic of the research came about "activating engineering insurance in project management using bank loans", to find out the reasons for stopping the work of insurance companies, because of their role in reactivating insurance in the Iraqi market.

This research seeks to achieve a set of goals:

1. To highlight the concepts of engineering insurance and distinguish them from the concepts of insurance to know the sudden and unexpected accidents that the projects are exposed to.
2. Explanation of the reasons for stopping engineering insurance in Iraqi insurance companies from the period (2015-2021).
3. Knowing the services provided by Iraqi banks to insurance companies by granting bank loans to the insured.
4. Explanation of the correlative and influencing relationship with the dimensions of bank loans in activating engineering insurance through the interpretation of the

statistical results of the questionnaire data directed to workers in Iraqi insurance companies.

We choose this research topic and these objectives because of the cessation of engineering insurance in Iraq and the urgent need for engineering insurance in project management for reconstruction in Iraq.

Section One

Literature Review

Engineering insurance is considered a type of insurance that is concerned with insuring and covering the subsequent maintenance work of construction projects during their implementation periods, and they are handed over to their owners after the implementation period. Among the examples of projects that can be covered within the framework of engineering insurance are “residential buildings, administrative buildings, recreational buildings and many other types of buildings, and here the banks seek to provide everything that fulfills the wishes of the customer or investors and save their time and effort, so the bank is an agent for the insurance company, which enables the customer to obtain financing from one place and accordingly we will address a conceptual approach in engineering insurance, project management and bank loans as follows:

First: engineering insurance

We will present the definition of engineering insurance, its origin and types, as well as explaining the relationship of activating engineering insurance in project management by using bank loans as follows:

Engineering insurance concept

Engineering insurance is one of general insurance branches aimed at compensating damages resulting from contracting and construction works, which uses the insurance industry to describe different types of documents in order to protect construction works, as well as the installation of machinery. Usually, the underwriting the engineering insurance contract require an insurer and an engineer to complicate the risks to be covered. One of the peculiarities of the engineering insurance branch is the insurance of all contractors' risks, machinery failure insurance, and insurance of profits loss resulting from machinery failure. The role of the engineer is no less important than the insured himself, in addition to his participation in the underwriting of insurance documents, as he is the first path for files of natural disasters as it is

considered one of the civil infrastructure field, and the installation of highly complex machines in all of their components (Al-Bayati, 2010).

Engineering insurance defined as: “One of the property insurance types, as it insures projects, equipment, etc., and covers all risks to which property is exposed” (Zaidan, 2010).

Engineering insurance also defined as: “protection from all risks to which engineering works are exposed, including projects and industrial works, and insurance of contractor risks, electronic devices and computers” or it is: “a group of insurances on property and civil responsibilities that seek to protect various industrial projects, whether constructional, transformational or extractive, from financial losses resulting from damages to machinery, equipment, devices, installations and infrastructure, from the start of construction until the completion of the actual operation.” (Alwan, 2020).

From the above, it can be said that the concept of engineering insurance is: “financial coverage for construction projects in case of exposure to damage as a result of natural accidents or arising from human intervention, including (contractors, raw materials, machinery malfunctions, design errors), and insurance mitigates these damages and reduces losses and reduce its occurrence.

Origination of engineering insurance

The origin of engineering insurance back to the inspections of steam boilers in the nineteenth century, as a result of accidents that occurred in Britain during the Industrial revolution, which led to massive damage to property and people, and accordingly serious steps were taken to provide protection against these dangers that threaten societies near to factories in the year (1854), the founder of the Manchester Society and some prominent people were interested in using steam energy, and one of the members of this society is authorized to use the services of boiler inspectors who work for the society, as this society was not only satisfied with providing advice on how to prevent explosions, rather, it guides the members to the most beneficial means of using machines, and although the Manchester Steam Power Users Association has provided many services to factory owners, its business is not like that of insurance companies now (Miraj, 2013).

In the year (1858), some members of the association established the first engineering insurance company, the Steam Boiler Insurance Company, which started its business in securing boilers, and then similar insurance companies were established. Initially, the business of these companies focused on boilers insurance only, then expanded to include pressure vessels, while in France, the Alsatian Society for Steam Machines was established in (1867),

and a Swiss company called (Balais) underwent the first insurance policy of the type (machine crash) in 1931, and on its basis in (1872), the era of machinery insurance began, which was known as (machine crash insurance), as it spread rapidly in other industrialized countries (Khader, 2022).

Types of engineering insurance

There is no specific type of engineering insurance related to project insurance, as it looks like fire, transport and marine insurance. Every risk that occurs is covered in a different way at the same time. It is not possible to prepare comprehensive products for all risks. Rather, they are prepared based on their appearance in reality. In addition to underwriting two completely different types at the level of items in the same project, due to their different geographical locations, this branch has a very great flexibility, which gives a margin of maneuvering to the insured who drops all the dimensions surrounding the project on the insurance policy, according to the general framework of engineering insurance is divided To: (Al-Fendi, 2012)

- A. Products of physical damage and products of entry into exploitation.
- B. The term of insurance to non-renewable products in a single installment and renewable in an annual instalment
- C. Insurance of all contractor risks.
- D. Insurance of all risks of installing machines.
- E. Insurance of all risks of contracting work.
- F. Insurance of the explosion of boilers and pressure vessels.
- G. Insurance of all dangers of low voltage devices and electronic devices.
- H. Insurance of pre-exploitation losses associated with insuring all contractors' risks.

Second: project management

All organizations nowadays realize that they operate in a changing environment and that they have to act quickly towards the forces that affect their performance and potential growth, and this need leads to act quickly in the implementation of many projects, and some of these projects may have a size and time period beyond the limits of initial expectations and it soon becomes apparent that these projects have limitations such as ineffective management, unclear objectives and inappropriate resources. Many organizations are involved in starting huge projects, and it is often a mistake because the goals are exaggerated and the management issues

are increasing, and big projects like this always need to be divided into smaller parts to facilitate their management and implementation. (Bash, 2018).

The concept of project management

Project management can be defined as: “the planning, direction and control of physical and human resources to face the constraints related to technology, cost, and time,” or it is “a set of organized activities directed towards optimal employment, better utilization of appropriate resources, and aimed at achieving clearly defined project objectives.” It means relying on various methods and methods of efficiency and effectiveness within a specific group (Dudin, 2010).

It was also defined on the basis of its administrative function as: “the responsibility for setting goals, organizing, planning, scheduling, estimated budgets, direction and control, to achieve the technical, time and financial standards of the project.” Therefore, the success of project management in performing its tasks will give the necessary justifications for the use of project organization, which can be summarized in The following points: (Al-Dabbagh, 2016)

- A. Ensuring that the final outputs of the project are clearly defined and understood by all the important parties in the project to achieve harmony and coordination between the project objectives and the objectives of the organization’s strategy.
- B. Defining responsibilities at each stage of the project clearly and understandably.
- C. Design and implement effective scheduling and control methods during project implementation.
- D. Obtaining the appropriate support from the parent organization to implement the project as well as through the use of appropriate communication channels.

We conclude from the foregoing that project management is: “a science and an art, and it has emerged into reality since the emergence of the first human civilizations, such as the Egyptian, Babylonian, Roman, Persian, Chinese, etc.”

Project management features

The traditional organization organizes in a hierarchical way the vertical relations between the boss and subordinates and divides the organization according to the functional dimension, production and geographical area, and the proportionality of authority from top to bottom, formal communication directs down the chain of command, and functional units are highly specialized and tend to work independently, Despite the efficiency of traditional, functional organizations in their work and their suitability to work in stable environments, they

tend to stagnate and therefore become unsuitable for the changing and dynamic environments that characterize project situations. (Al-Hadidi, 2020).

The distinctive characteristics of projects require the use of a special type of management that suits these characteristics which has led to the emergence of project management. In addition to the fact that the application of the principles of traditional schools, behaviorism, and the development of the concept of individual organization systems for projects led to the emergence of new concepts. This view has evolved to include managerial roles, organizational styles and forms and includes the following characteristics: (Battal, 2011)

A. Project management is characterized by the leadership of one single person, namely the project manager, who is at the top of the organizational hierarchy in project management, and manages the project with complete independence that differs from the traditional pattern series or traditional administrative orders, and this pattern of organization is due to the so-called functions as well as to the target pattern. In addition to the temporary nature of the project.

B. The project manager is not considered the sensitive center that gathers all efforts directed towards the completion of the project and the achievement of its objectives within the prescribed plan.

C. Since a single project requires different skills and resources, the actual work can be carried out by individuals and participants from different functional spaces or even from outside the organization.

We conclude from the foregoing that one of the characteristics of projects is to show the development of production and similar projects in marketing units, and they begin in research and development units, as project management leads to the activation of other support functions such as personnel evaluation, accounting and information systems.

Third: Bank loans

We will discuss the definition of bank loans and their types through the following:

Definition of bank loan

The concept of loans is a type of financial resource that the state resorts to in exceptional cases, although it is not characterized by periodicity and regularity. The scope of the purpose of the public loan is determined to distinguish it from other forms of the state's public debt, and it is defined as: "a sum of money that the state obtains by resorting to others such as individuals, banks and financial institutions and undertakes to return it with the interest accrued

from it within a specified period in accordance with its conditions.” This definition shows The public loan is one of the state’s revenues, but it differs from taxes and fees as they are mandatory as they are considered public resources for the state (Al-Janabi, 2011).

Loans were also defined as: “a sum of money that the state borrows from the parties that have the funds, which the state undertakes to return according to the agreement, which results in many economic, social and political effects on the national economy” (Bardawil, 2015).

Types of bank loans

The division of public loans varies according to the different criterion on which the division is based. Therefore, different types of loans can be distinguished, as follows:

Internal loans: The loan is internal and the loan is held within the state. It requires providing savings for the market’s need for private investments, where they are sufficient to finance them to cover the amount of the internal loan, sometimes called (the national loan), and it is necessary to meet the expenses of the war waged by the state, or to finance development projects, or clearance from external debts and burdens, and in this case it does not include advantages for underwriters such as high interest (Al-Janabi, 2011).

External loans: It is the loan that the state obtains from a natural, moral or legal person residing outside the country or from foreign countries. The state resorts to these loans when the state needs large capitals and its internal revenues and national savings are insufficient, as well as the state’s need for foreign currencies to cover the balance of payments deficit and to support its cash and protect it from its devaluation (Al-Mahaini, 2013).

Agricultural and real estate loans: Agricultural loans are financing for agricultural activity where banks help farmers to buy seeds of various plants, fertilizers, agricultural equipment and machinery, and they are long-term loans in nature as they last up to (30 years), while the real estate loan is financing residential real estate activities it is also a long-term loan, and usually the property itself or the land purchased be as a guarantee for the repayment of this loan (Abu Qadeerah, 2014).

Fourth: The role of engineering insurance in projects management

Engineering insurance is an insurance that provides all types of protection against damages, losses and damages for all contracting works related to projects, whether engineering, equipment, or construction and construction machinery. Engineering insurance also includes liability against third parties with regard to property losses or bodily damages that you undertake when carrying out projects.

Abdul Rahman Al-Ghrimel, a member of the Insurance and Reinsurance Brokers Committee and the head of the Awareness and Media Committee, stated that everyone should understand the nature of the engineering insurance policy, which includes several things, including insurance against installation risks and failure of contractors' machinery and equipment. It is also necessary to know what this document covers and what are the exceptional additions which can be added, as well as clarifying the legal aspects. He pointed out that the engineering insurance began to work in the United Kingdom during the industrial revolution and the frequent explosions in the boilers due to the lack of experience in those who operate these machines (Addai, 2015).

Therefore, an association was established in Manchester (Manchester Steam Users Association) in the year (1854), which in turn contributed to reducing the rate of accidents and explosions by checking the boilers periodically by the members of this association and providing suggestions to the owners of these machines, due to the seriousness of the situation and the need to Insurance, and the first (Boiler Explosion Policy) appeared in order to develop the engineering insurance after the expansion of the underwriting to include: Insurance of some other machines such as cranes, elevators, electric turbines and generators, as a result of the occurrence of several accidents for some of these devices and machines, which led to the emergence of a place downtime document to cover it (Abdullah, 2019).

The Iraqi Insurance Company also clarified that the rapid and advanced format and the necessary need for insurance protection led to the emergence of various documents and in several forms to cover several additional risks, including insuring all risks of contractors, insuring equipment and machinery, insuring all insurance risks, insuring loss of profits as a result of machinery malfunction, Insurance of the risks of completed engineering works and insurance of public liability towards others and professional liability insurance (architects and civil engineers), work injury insurance, electronic equipment and computer insurance.

Contractors must insure the projects that are being carried out by them, to reduce the risks that may occur, as well as not to stop or delay the finishing of these projects, by choosing the appropriate insurance coverage and paying the necessary compensation in the event of any damages, and the insurance company stressed the need to work to increase Insurance awareness of everyone and emphasizing that it is a basic thing and not to finish the official papers for the issuance of project licenses, and engineering insurance must be taken as a guarantee for the continuity of the project and its protection until the completion of the project. The company also made it clear that the cost of the engineering insurance does not exceed

(0.1%) of the value and cost of the project. It justified the low demand for engineering insurance to the lack of awareness among contractors of the importance of this insurance.

Fifth: Reasons for activating engineering insurance in projects management

There are a number of reasons that require the reactivation of engineering insurance in project management, which are: (Ahmed, 2017)

To insure all contractors' risks: This type of insurance covers construction projects during their implementation periods until they are handed over to their owners. The coverage can also be extended to include subsequent maintenance work after the implementation period. Among the examples of projects that can be covered within the framework of this type of Insurance includes:

- a. Various types of residential buildings, administrative buildings, recreational buildings, and many other types of buildings such as hospitals, hotels, resorts, factories, road and bridge construction.
- b. Insurance coverage provided on all contractor risks include: physical damage caused by fire, burglary, theft, explosion, lack of skill, faulty execution, flood, water leakage, hurricane, earthquake and landslide (called: natural hazards).
- c. Covering the civil liability document for bodily and material damages that occur to third parties due to the implementation of these projects.

Machinery breakdown insurance: This type of insurance covers machines and equipment during their operation or during their rest periods or in the event of their dismantling during cleaning or maintenance, as well as when they are re-installed. Examples of machines and machines that can be covered by this type of insurance are (productive machines and equipment in factories, machines and equipment for power generators, turbine engines, machines and equipment for cooling rooms, refrigerators, and centrifuges), the insurance protection provided by the machinery malfunction policy is represented by: (material losses that result from defects in materials or castings, wrong operation), or any other electrical reasons.

Equipment and machinery insurance for contractors' projects: This type of insurance covers machinery and equipment during its operation or during its rest periods or in the event of its dismantling during cleaning or maintenance, as well as when re-installing. Examples of machinery and machinery that can be covered by this type of insurance are: excavators, cranes, winches, cement mixers, asphalt mixers, generators, pumps, foundations crushing machines, grain blowers, harvesters, graders, lorries, forklifts and the like. The

insurance coverage provided by the policy to contractors and equipment also includes: (Losses resulting from fire, theft, explosion, collision, overturning, earthquake, and landslide) and may extend to cover the risk of transportation and off-site movement.

Sixth: The advantages of using bank loans to activate engineering insurance

Bank loans provide several advantages for activating engineering insurance: (Zaer, 2015)

1. Reaching a wide and large segment of potential customers.
2. Providing a good source of insurance products that will benefit the insurance companies.
3. Saving in cost, effort and time by adopting new channels in marketing these services, as the cost provided by this type of activity is the lowest compared to other types.
4. The rapid expansion and spread of insurance companies without the need to conduct research in the financial market.
5. Entering more into the market without creating a new network.

Seventh: The reasons for stopping the engineering insurance from (2015-2021) in Iraq

There are a number of reasons and challenges for stopping the engineering insurance business in projects:

1. The weakness of insurance culture and insurance awareness in general in the Iraqi society and the increment in rates of crime, acts of sabotage, fire and administrative corruption.
2. The need for new legislation that would encourage society to market various insurance policies and increase the tax exemption in insurance premiums.
3. The lack of coordination between public insurance companies and government banks, which makes them suffer from lack of information among them.
4. ISIS occupation of some governorates in Iraq, which resulted in several obstacles in the completion of projects, that led to large losses for some insurance companies and their branches.

Section Two

Research Methodology

In this topic, we will address the research methodology, which includes: "the research problem, the importance of the research, research objectives, research hypotheses, research limits, research outline, research methodology, means of research data collection, field and community of the research sample, search terms" as follows:

First: The research problem

Insurance has become a guarantee for modern societies around the world, because of the insurance services it provides in general for various areas of life, which are "life insurance, fire insurance, health insurance, transportation insurance, marine insurance, engineering insurance, etc.", and from here we shed light on one of the types of insurance In Iraq, it is the engineering insurance to look into the reasons for stopping the engineering insurance after the year (2015), and to provide appropriate solutions to activate the engineering insurance in projects, and based on the above, the research problem lies in the following questions:

1. What are the reasons for reactivating engineering insurance in project management?
2. Why did engineering insurance stop in Iraqi insurance companies from the period (2015-2021)?
3. What advantages can bank loans bring to Iraqi insurance companies?

Second: The importance of research

The importance of the research stems from the importance of the topic tagged with "activating engineering insurance in project management using bank loans", as insurance is one of the important sectors that affect all aspects of life.

Third: Research Objectives

The research seeks to achieve a set of goals:

1. To highlight the concepts of engineering insurance and distinguish them from the concepts of insurance to know the sudden and unexpected accidents that the projects are exposed to.
2. Explanation of the reasons for stopping engineering insurance in Iraqi insurance companies from the period (2015-2021).

3. Knowing the services provided by Iraqi banks to insurance companies by granting bank loans to the insured.
4. Explanation of the correlative and influencing relationship with the dimensions of bank loans in activating engineering insurance through the interpretation of the statistical results of the questionnaire data directed to workers in Iraqi insurance companies.

Fourth: Research hypotheses

The research is based on several hypotheses, which are as follows:

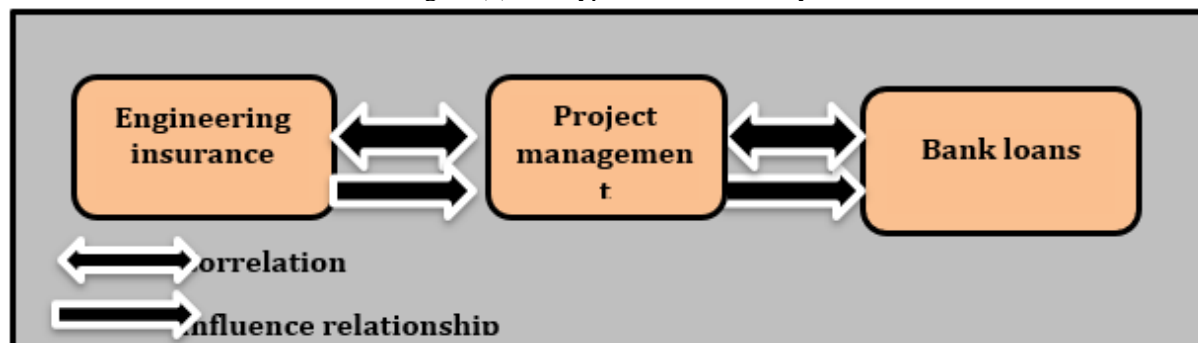
First hypothesis: There is a statistically significant (0.05) correlation for the "Engineering Insurance" variable in "Bank Loans".

The second hypothesis: There are statistically significant differences (0.05) for the engineering insurance variable affecting bank loans.

Fifth: The relationship between search variables

The research scheme represents the hypothetical statistical structure of the research subject, which explains the significant correlation and its impact on the investigated samples, and it includes three types of variables:

Figure (1) The hypothesis of the study



Source: Prepared by the author (2022)

Sixth: Research Methodology

The researcher adopted the descriptive analytical approach of the research variables in order to analyze the theoretical concepts in the reality of the Iraqi insurance market sector and activate them through bank loans.

Seventh: The limits of research

1. **Spatial boundaries:** Three government companies were selected in the field of Iraqi insurance / engineering insurance branch and a group of banks: “Al-Rafidain, Iraqi Trade, Al-Khaleej commercial, Al-Ahly Al-Iraqi, International Development, and Governmental Real Estate” in Iraq.
2. **Temporal limits:** It is the period for starting the preparation of the theoretical framework for the study of the research, and the procedures of the applied framework on the researched sample, which start from (1/7/ 2022) until (10/8/ 2022), interspersed with the delivery procedures.

Eighth: Means of research data collection

The researcher adopted a set of methods in writing and interpreting the research results, which are:

1. **Theoretical side:** the researcher relied, in writing and transcribing the theoretical part on a set of books, letters, theses, scientific journals and foreign articles obtained by the researcher from the College of Administration library - University of Baghdad, other university libraries, the Internet, and scientific reports.
2. **The practical aspect:** the researcher adopted in the applied framework the data collection tool (the questionnaire) that was distributed to the workers in the surveyed samples of (Iraqi insurance companies / engineering insurance branch - in Iraq), as well as the interpretation of the engineering insurance compensation lists indicators.

Ninth: The field and the research community

The Iraqi insurance companies in Baghdad the capital of Iraq were selected as a field for applying the research, and the engineering insurance branch was identified in the research sample. The research community was a group of (900) workers in insurance companies, and (490) workers were selected from them according to Morgan's distribution.

Tenth: Research terms

There are a group of terms related to the topic of research are:

Engineering insurance: It is a branch of damage insurance that uses means of insurance to describe different types of documents in order to protect the works of the project, as well as the installation of machinery and what underwriting require form the engineering

insurance documents, insured and engineer due to the complexity of the risks to be avoided or prevented (Muslim, 2015).

Project management: It is a temporary activity that begins to produce a product or provide a service, and the end is reached when the goal is achieved from the completion of the project (Idan, 2017)

Bank loans: a set of funds granted by banks to a moral person temporarily in return for a signature pledge with its interests (Abu Abdali, 2018).

Section Three

Results and Discussion

Application framework

Iraqi insurance companies, under the current circumstances, seek to activate insurance through banks that deduct insurances in the field of loans for small and large projects, including: “building housing units, shops, building private schools, building hospitals, etc.” However, there is a problem of lack of coordination with most of the banks that deduct the value of insurance and keep it, while there are a few banks that support insurance companies by sending the borrower’s insurances to companies, and then they determine the value of compensation based on the value of the project amount. In last years (2015-2021) project insurance has been suspended, due to a set of challenges faced by insurance companies, although in the period from (2003-2014) they provided many insurances that indicate the main reasons for stopping the activity of insurance companies in general, according to what was stated in the analysis of the indicators of Iraqi insurance companies as follows:

First: Analyzing the indicators of Iraqi insurance companies

There is a set of indicators for the engineering insurance business in the projects is:

Gross fixed capital formation

The impact of the increase and decrease in the total fixed capital formation on investment, which led to the reduction of investment opportunities operating in the private sector from insuring its operations by reducing the losses suffered by the insured and the consequent provision of stability and security. The total capital formation can be clarified in table (1) which shows the decrease and the rise in capital at fixed prices as a result of the repercussions of the financial crisis experienced by Iraq, this decrease led the companies to stop working in the year (2015), as shown in the following

Table (1) Gross fixed capital formation

Million dinars	Change %	Total Fixed Capital	the year
-		5757,3	2007
224		18479,4	2008
68-		5919,8	2009
81-		1154,2	2010
934,1		11926,7	2011
33,2		15912,9	2012
-		16903,9	2013

Source: Prepared by the author (2022) based on data of the Iraqi Ministry of Planning, the Central Bureau of Statistics (2007-2013)

It was found from the table above that the total fixed capital formation decreased for the years (2009 and 2010) as a result of the repercussions of the global financial crisis that began in (2008), and then increased in the years (2012 and 2013), but it is a weak percentage that did not reach what was planned in the national financial development plan for the year (2015).

Project Engineering Insurance Compensation

The data of government insurance companies showed the size of projects from the period (2003-2014) in the field of their real estate and land holdings achieving monetary benefits that flow into the balance sheet, as well as that they contribute to improving the economic sector and address the housing crisis, and participate in the campaign to rebuild Iraq, table (2) below shows the size of the projects as follows:

Table (2) Engineering insurance compensation for projects

the year	reinsurance company	Iraqi General Insurance Company	National Insurance Company
2003	-	4444608000	20049802
2004	-	577930000	21939194
2005	5758438	7861358000	2878974
2006	9199521	8176186000	21662919
2007	9304002	8390228000	29905406
2008	16750327	10769009000	30769420
2009	17923707	12100000000	47185496
2010	18186686	14527465000	73471215
2011	341286869	16686118000	100161010
2012	34180447	21653353000	114002589
2013	38082746	27131171000	129485495
2014	40489939	35586638000	100692816
the total	224004502	173105664000	692204336

Source: (Kamel, 2016)

Table (2) shows that the National Insurance Company witnessed an increase in the volume of projects since (2003-2005), then the volume of projects decreased in (2006) due to the security instability in the country, this decrease effect on the activities of construction and projects and the activities of real estate rental, and then it returned to increase gradually because of the rise in project insurance from (20 billion) dinars in (2003) to (129 billion) dinars in (2013).

As for the volume of projects in the Iraqi Insurance Company, it witnessed a gradual increase in (2003) with a value of (4 trillion) until it reached (35 trillion) in (2014). These amounts exceed the rest amounts of other companies, and the reason is due to the company's contribution to in Securities Commission after (2003), bank deposits were invested in the purchase of real estate, the volume of projects in the reinsurance company in the year (2005) reached (5 billion) until it reached (40) billion in (2014), Because it was affected by the projects of the two previous companies.

It can be said that this period of the Iraqi insurance companies was a positive indicator of the improvement of the financial situation, as well as the development of the economic situation in general, which effects on the conduct of activities in these companies in terms of service and productivity.

Second: Testing research hypotheses

We will explain the analysis of the results of the research hypotheses as follow:

To test the first correlation hypothesis, which state that “there is a statistically significant correlation between (engineering insurance) and (bank loans)” with a significant significance (0.05), as the research hypothesis was verified by analyzing the responses of the workers to the questionnaire questions for each of the research variables. The results of table (3) showed that there is a moral correlation between engineering insurance in bank loans, as the correlation value came (0.405), and this is a very significant and strong value at the level of (0.05) according to the results of (correlations) and it allows the acceptance of the first research hypothesis as shown below:

Table (3) Correlation coefficient between engineering insurance and bank loans

Mediator	Bank loans
Independent	
Engineering insurance	0.405

Source: Prepared by the author (2022)

To test the second hypothesis which states that (there are statistical differences of significance (0.05) for the engineering insurance variable affecting bank loans), as the third hypothesis of the research was verified by analyzing the responses of the workers to the questionnaire questions for each of the research variables, and the results in Table (4) showed that there is a significant effect relationship between engineering insurance and bank loans, as the effect value was (0.162), and this is a very significant and strong value at the level of morale (0.05) according to the results of (correlations), which is greater than (0.01) and the result allows the acceptance of the hypothesis search

Table (4) the impact relationship between engineering insurance and bank loans The sample / N=455

Mediator	Bank loans (Y)					
Independent						
Engineering insurance	.Sig	T	R²	F	A	B
	0.05	9.43	0.162	88.9	0.394	0.405

Source: Prepared by the author (2022)

In light of this hypothesis, the effect relationship was formulated for the response variable (bank loans), which represents the value of (Y) and the explanatory variable (engineering insurance), which represents the value of (X), and the analysis of the results showed the linear regression equation: $(Y=A+BX)/(0.405 + 0.394 = 0.799)$, and Table (4) shows that the calculated (F) value amounted to (88.9), with a significant level (0.05) and with confidence limits (95%), and this means that bank loans effect on the activation of engineering insurance, and that the existence of bank loans by the value of (A=) and the engineering insurance by the value of (B=), provided that it changes by one increase (1) will lead to a change in engineering insurance, and this means that there is an effect that whenever it increases by one unit, it will affect \bar{x} on the independent variable (engineering insurance), and the value of the coefficient of determination (R2) reached (0.162) This means that its amount (50%) of the variance that occurs in bank loans, and it explains the act of the mediator, which was added as a model to the engineering insurance, and the table indicates the significance that appeared by

(0.05), which confirms the existence of a high and moral effect of bank loans. In engineering insurance, and this confirms the validity of the third hypothesis, so it is possible to “test the influence relationship for the sub-hypotheses”, as the results of the verification of the third hypothesis, which was represented by the presence of a statistically significant effect relationship between each of the independent variable and the dimensions of the mediating variable., as shown in Table (5), which explains the values of the effect coefficient among the research variables in the following:

Table (5) Analyzing the effect of bank loans on activating engineering insurance Values N= 455

Bank loans	Engineering insurance					
	Sig	قيمة (T)	قيمة (F)	(R ²)	A	B
external determinants	0.000	7.41	55.03	0.106	0.987	329.0
economic and social determinants	0.000	7.46	55.69	0.108	679.0	331.0
Determinants of public awareness	0.000	7.38	54.46	0.105	740.0	328.0

Source: Prepared by the author (2022)

Section Four

Conclusion

We will present and discuss the conclusions that we reached through the research in the theoretical and applied frameworks, as they can be benefited from by scholars and researchers in the field of studies similar to the subject of the research, and then provide a set of recommendations regarding them as follows:

First: The conclusions

1. Insurance has an effective role in economic and social life because it is the best way to protect individuals and their property, and it provides a protection cover for them when they are exposed to danger and grants financial compensation to them and then maintains the purchasing power of individuals within the economy, it works to transfer the different types of risks that Institutions may be exposed to, to other companies which are reinsurance companies.
2. It turns out that despite the role played by banks in providing engineering insurance compensation in Iraq, this role still has limited impact due to the concentration of most private banks in the capital region, Baghdad, on the one hand, and on the other hand, there is a large group of Iraqi society that does not deal with private banks because of religious scruples and fear of high interest rates.

3. Iraqi insurance companies have faced several important obstacles, including: "the absence of insurance awareness among individuals, the absence of the media role of insurance institutions and the promotion of their services."

4. Insurance companies failure to develop their products in line with market needs, and the failure of the methods used in the field of issuance and compensation, as the manual method prevails in the completion of work, which leads to delays in resolving the insurance procedures.

Second: Recommendations

1. Allowing research sample (banks and private banks) to participate in opening credits and setting up a mechanism that shortens the time required for engineering insurance procedures.

2. The relevant authorities should simplify and facilitate the procedures related to obtaining plots of land for the implementation of priority projects, and supporting the prices of land allocated for this purpose in order to be an incentive for the demand for loans.

3. The necessity of directing state insurance investments to productive and vital labor-intensive projects in order to create dense and diversified job opportunities, so that the role of the insurance company is an important and pivotal supportive role in the field of expanding the engineering base and developing the Iraqi construction sector.

4. Cooperation and communication with all layers of civil society and age groups to spread the insurance culture and support it for generations, through cooperation with various educational departments and work on coordination with civil institutions and civil society entities directly, in a manner that serves society for this vital and important sector of the economy.

Third: Limitations of the study

Engineering insurance in Iraq stopped because of the liberation battles and military actions also there are only two public companies specialized in engineering insurance.

Fourth: Suggestions for future work

After doing this research we found that there is an opportunities to perform more research related to the research field such as:

- A study of engineering insurance in public companies in Egypt and Syria and the ability to apply it in the reconstruction of Iraq
- The effect of government facilities in increasing engineering insurance profits
- The impact of engineering insurance in the management of small projects

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