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Research Article

The Impact of Digital Insurance in Reducing the Risks of Climate Fluctuations: In a Sample of Iraq Insurance Companies

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ABSTRACT

This study aims to identify the extent of the impact of insurance information technology on the activity of Iraqi insurance companies from two dependent variables (the advantages provided by technological insurance, and the presence of factors that contribute to the application of information technology) and the dependent variable (supporting the activity of insurance companies). It has been applied in Iraqi insurance companies (study population) on a sample consisting of (70) individuals. Through a questionnaire prepared for this purpose, Descriptive statistics are used to find the relationship between the variables. The study showed that insurance information technology contributed to reducing the effects of climate change risks on affected groups, especially the agricultural sector. It will enable it to monitor climate fluctuations and determine the amount of premiums and compensation more accurately and quickly. The study recommended that Iraqi insurance companies must enter into strategic partnerships with companies (Insurtech) that provide high technology capabilities and skills.

Keywords: Digital Insurance, Climate Change, Technological Insurance, Insurtech Business, Temperature.

INTRODUCTION

Climate change is revealing the hidden interconnections between various economic sectors, leading to new disruptions and social costs. production losses from climate change are likely to occur for several decades in the future through channels other than short-term temperature changes, channels include ecosystem collapse, mass migration and conflict.

Therefore, it is important to limit the extent of climate change to reduce the risk of catastrophic and unpredictable damage to the economy and well-being. Climate risks can add challenges through their exposure to companies, the household sector and countries that witness financial institutions directly from large climate shocks, or indirectly. Through the impact of climate change on the macro economy and the effects generated within the financial system, these exposures are manifested in the form of increased risks of financial default in loan portfolios and/or decline in the value of assets, and the resulting tightening of financial conditions in the event that banks reduce lending (UN Office for Disaster Risk Reduction, 2021).

The insurance sector is considered one of the most powerful sectors and one of the most important basic pillars that contribute effectively to the state's economy and its protection, by providing security and stability to

individuals and institutions from the risks that they may be faced in addition to the huge volume of funds that are pumped and operated annually in various investment channels to support economic growth and ensure Social security, and as a result of the importance that this sector enjoys, many countries, especially developed ones, have paid attention to the necessity of constantly developing it and inserting it into the dynamism of the digital economy, by directing technology towards the world of insurance through emerging companies that operate to develop the insurance industry and improve the performance of traditional insurance companies, by positioning the industry towards the digital transformation and technological innovation. A group of smart solutions and applications.

Study Problem

The problem with researching the scope of work of insurance companies is the limited work with digital services technology, preserving traditional patterns in providing service to the customer, and the lack of focus by these companies on the close relationship between digital insurance service and improving production, as the Iraqi insurance company is still providing its services in traditional ways, despite the establishment of Its website is the insurance service provided and does not keep pace with modern technology developments in opening new fields and new clients to cover damages to agricultural crops as a result of climate change.

Therefore, we can ask the main question as follows: How does the application of insurance technology affect supporting the activities of Iraqi insurance companies?

Study Objective

1. This study aims to Clarify the concepts related to technological insurance.

2. Highlighting the positive impact of technological insurance technologies on the insurance sector.

3. Knowing the possibility of providing technological insurance products by insurance companies in Iraq.

Importance of the Study

The importance of the study is that it highlights the importance of technological insurance in changing the traditional insurance industry and making it more developed, and knowing the reasons and benefits that push insurance companies to rely on it.

Study Hypotheses

First hypothesis: There is a statistically significant impact of the advantages provided by technological insurance on the activity of insurance companies in Iraq. Second hypothesis: There is a statistically significant impact of the presence of factors that contribute to the application of technological insurance on the activity of insurance companies in Iraq.

LITERATURE REVIEW

Definition of Insurance Technology and Technology

The term “insurance technology” is composed of two words: insurance [abbreviated as (Insurtech) or (Assurtech)], meaning insurance technology or technological insurance. This term is inspired, which relates to the production and provision of services that combine financial services and the technology element. Fintech (Fintech) is an insurance technology, and nowadays it is used to describe the financial technology industry, a subsection of technology, and it uses innovative methods and methods to create completely new disruptions that rely on small start-up companies that are widespread in the market the global insurance industry (Signority, 2017).

Many definitions have been provided in the field of financial technology to encompass the concept of insurtech, including insurtech is a technology related to “a set of business models or platforms through the application of innovative technologies in “Insurance industry” (Robles, 2019), it is “a relatively new term used to describe the insurance industry, through the new innovations that transform and change the insurance service that improves cost savings and maximize the efficiency of both the provider and customers” (Atlas Conseil lnternational, 2018), it also relates to the emergence of “innovative technologies that are changing the current model of the insurance industry, with the aim of improving efficiency and enhancing customer satisfaction, by relying on digital organizations and small startups with great focus, excellent technical capabilities, and an agile culture that are well suited to innovation and driving change” (The European, 2019).

The Impact of Technology on the Insurance Value Chain

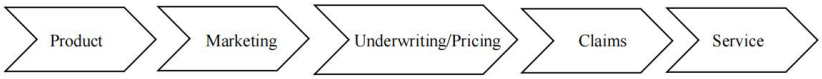

Figure 1. Bulletin of the Egyptian Insurance Federation, 2022. The impact of technology on the insurance value chain, Weekly Issue No. 80.

The value chain is the chain through which the products pass in order, and at each step, the product gains additional value, which begins with designing the product (document), followed by marketing it, then underwriting and pricing, then settling compensation, and finally customer service (**Figure 1**).

1. Product design technology insurance affects the insurance industry, especially the methods of obtaining data and analysis, which helps in the process of designing the document in a way that suits the customer's needs and creating new insurance coverages.

2. Marketing: Using technology to reach target customers faster, for example through their phones or social networking sites.

3. Underwriting and pricing: Technology provides new data and advanced analysis, which helps us better understand risks, how to reduce them, and use that data in pricing to make pricing more accurate.

4. Compensation settlement: Technology contributes to the ease of reporting in the event of an accident and speeds up the compensation settlement process.

5. Customer service: Many interactions between customers and the insurance company are now taking place digitally (electronically) via social platforms on the Internet and phones to facilitate the communication process between the customer and the company and save time.

Standard or Parametric Insurance

Indicator-based on products were proposed by Halcrow in 1949, and the basic principle of these index-based on management. Was crop yield losses no longer assessed on the basis of the farm yields, but rather through an independent, observable indicator. The appropriate indicator must be objective, transparent, Available and sustainable (Conradt, 2014).

To provide insurance by paying compensation based on a pre-determined index for losses resulting from measurable events such as storms, earthquakes, crop damage, low production levels, too much or too little rain, drought and extreme temperatures, as this type of insurance is common in emerging markets. or areas at risk where there are no opportunities to benefit from traditional insurance (Catapult Satellite Applications & Innovate UK, 2018).

More comprehensively, standard insurance refers to (a means of coverage that will alleviate the problem of farmers, fishermen, and small companies after losing income or earning opportunities due to weather conditions, such as excessive or low rainfall, wind speeds, hurricanes, etc., as this insurance allows for quick settlements. For claims in the absence of loss assessment procedures and in light of the reliance purely on the operation of the indicator (a certain wind speed, a pre-agreed level of rainfall in the terms of the insurance contract (Munich Climate lnsurance lnitiative, 2022), the deviation of the indicator from a pre-determined set of values results from an automatic operation of the coverage where companies Insurance compensates the policyholder according to an agreed-upon formula. This indicator was an objective environmental variable that was not subject to human manipulation (Horton, 2018).

Sources of Data Relied Upon in Standard or Parametric Insurance

The data used in designing parametric insurance products is witnessing a noticeable improvement, and the development of these products can be noted as follows (Assah, Touffut, Chemiller-Gendreau, & Sidibe, 2017):

1. Meteorological stations: The first experimental projects relied on existing meteorological stations, which served as the main source of data in the year 2000. However, relying on these stations, especially in rural areas, entails the main danger, which is the discrepancy between the values measured by the weather stations and what is actually observed in the field.

2. Satellites: The year 2010 marked the beginning of reliance on satellite images to develop touch insurance products based on indicators, as satellite data is accurate, which allows for the reduction of fundamental risks.

3. The Internet of things: It was expected that the Internet of things will play a prominent role in the coming years, as it provides data related to sensors embedded in industry and buildings. This provides the geophysical, topographical, and climatic data necessary to design standard insurance products (Catapult Satellite Applications & Innovate UK, 2018), improve insurance services, and facilitate their access to customers.

The Importance of Agricultural Insurance

The importance of agricultural insurance is in managing the risks that farmers are exposed to through the following:

1. It absorbs the shocks that the farmer is exposed to as a result of disasters that are beyond his capacity.

2. Agricultural insurance is an important tool used by the state to support and protect the agricultural sector.

3. Protecting the farmer's income to enable him to continue agricultural activity.

4. Promoting investment in the agricultural sector by expanding the agricultural loan circle to the largest possible number.

5. Promoting agricultural and social development and contributing to increasing the rate of economic growth.

6. Securing the nutritional needs that must be met by individuals in society, which leads to avoiding food crises resulting from fluctuations in the general levels of world food prices.

Obstacles to Insurance for Farmers' Crops

There are basic obstacles facing agricultural insurance, which are as follows:

1. Lack of accurate information on production, statistics and data related to agriculture.

2. The methods used in agricultural production, the cultivated areas and the losses it suffers over pre-established time periods.

3. The high level of insurance premiums and the lack of appropriate insurance products for various agricultural activities and failure to take into account the nature and. The size of agricultural production and failure to take into account the nature of agricultural areas.

4. The phenomenon of adverse selection of risks, as the farmer can predict the years in which the crop will be good and thus resorts to covering the risks that he finds himself most in need of and keeps the good risks for himself. Thus, the insurance portfolio becomes unbalanced and is concentrated only on the bad risks.

The Risks of Climate Change in Iraq

The annual report ranked Iraq among the five most vulnerable countries in the world towards climate change, according to the Global Environment State of Western Asia (GEO-6) for the year 2021, as the effects of climate change have become known to all. It has cast a shadow over the livelihood of the elderly in Iraq, over the various Iraqi sectors, in light of the fragile conditions of the country and the dilapidated infrastructure. The results of these effects were clear on the sectors that have a direct impact on the life of the citizen and his economic, water, and food security. Their effects were Clearly on the economic and health aspects and life in general, and it can be summarized as follows:

Temperature Rise Index

The climate that is exposed to an environmental disaster is classified, due to the rise in temperatures, as Iraq is among the most threatening countries, according to what was stated in the global environmental report for 2021, which classified the temperature anomaly index as very high (1.5) °C and (0.9) °C It is very low, the temperature anomaly in Iraq was (5) °C, which is very high (Institute of Economics and Peace, 2021), as expectations based on national numerical climate models indicate a very steady increase in temperature in the year 2020 according to the aforementioned expectations (0.9) °C since 2007, it may reach (5.3) °C on a number of days in the summer, which increases the critical temperatures that have reached above 50°C per year, as Iraq suffers from a rise in temperatures in the central and southern regions in particular and the entire country in general, which requires understanding its effects. Environmental, political, economic, social and health issues at the present time and in the future to reach successful means to reduce the negative effects of rising temperatures. Iraq was severely affected by a change of 50 degrees Celsius, as it is noted that the regularity of heat waves above the climate has increased, especially in recent years, due to the increase in the country's temperature by (0.7) °C degrees Celsius than it was 100 years ago, and depending on how the world responds to climate change, average temperatures could rise by 2-3 degrees Celsius in Iraq over the next 100 years. This rise will lead to devastating effects, including a decrease in rainfall levels. Consequently, water resources are severely affected by these temperature changes rainfall rates.

The clear decrease in the annual rates of rainfall, the amounts of which are expected to witness a significant and continuous decline in the year 2020, a decrease of more than (30%) from its average during the period (1938-1978) may reach a significant and continuous decrease, is evident in heat waves, and this is an indication that in addition to that, climate change has exacerbated the problem of sudden scarcity, drought and heavy rainfall. Estimates by the World Bank in 2011 indicated the existence of a shortage and scarcity of water in the Tigris River.

The Euphrates and their tributaries are large sources of renewable water for Iraq compared to the actual need during the period from 2000 to 2009. While this percentage is expected to reach 37% during the period from 2020 to 2030, which will increase to 51% during the period from 2040 to 2050 (Climate Change Knowledge Portal, 2021) This explains the reason for the major collapse occurring in the agricultural sector, Iraq's economy, natural systems, biodiversity and vegetation loss.

Water Scarcity and the Expansion of the Salt Tongue to the Shatt al-Arab

The increase in extreme climate events has led to environmental fragility and water scarcity, as river water levels have decreased due to the decrease in rainfall, in addition to the construction of dams in downstream or upstream countries, which has caused (29%) and (73%), respectively. More than 50% of the water flow to the Tigris and Euphrates rivers in Iraq and Iran has decreased from the water used in Iraq coming from Turkey, and Syria and regional water management policies have affected the arrival of Regional water management policies have resulted in small amounts arriving in Iraq, and therefore the most affected is southern Iraq. Annual fluctuations in rainfall mainly affected the agricultural sector, which in turn was reflected in food security and internal peace at the country level. Iraq was exposed to the risks of water shortages according to an average water risk index of less than 1.25 (which is determined by Between greater than (3) very high, Iraq degree (5) and very low (Institute of Economics and Peace, 2021), water flow fluctuations and low amounts of good quality water, medium high risk index for water, make Iraq vulnerable to climate changes that contribute to increasing areas of desertification and dust storms.

Characteristics of the Insurtech Business Model and the Technologies Adopted

Insurtech companies benefit from emerging new technologies to reduce costs and provide insurance coverage that suits the business model of these companies by focusing on customers, personalizing products, and better customers.

It is characterized by complete automation of processes, making decisions based on available data. The model also relies on mobile phone insurance technology and its applications to reach broad coverage, through which premiums are paid automatically through its activity platform on parts of the insurance market other than Insurtech. companies usually focus In this context (Koprivica, 2018).

Thomas believes that the Insurtech business model is based on a culture of creativity and innovation, as technology companies are keen on experimenting with new methods without fear of rapid failure, and this means violating them. It adheres to the rules and its belief that failure breeds success. Its methods also tend to create a brand for itself with simple names that include “Who is your friend (Oscar)?”, Or what could be more put the following question: What could be more reliable Varieties of technology used: **Table 1** summarizes the recovery of some (Lemonade) (Ryan, 2017).

Table 1. Concepts and Types of Technology Adopted in Insurtech Activity

Category/concept	Description	Companies
Peer to Peer insurance	A combination of traditional mutual insurance and modern technology.	Freindsurance (German) Inspeer (French) Lemonade (USA)
On-demand insurance	A model for covering risks faced by the client at a certain moment, by providing insurance offers to cover selected time periods.	Trov, Slice (USA) Cuva (UK), Tikkr (Sweden)
Digital Insurance	Entire digital insurance product offering is only accessible online.	Oscar (USA) Zhong An (China) Bima (Marchés émergents)
Big data Analytics, Insurance Software	Providing software solutions in various processes: product offerings, risk selection, pricing, detecting fraud, providing personalized products, predicting claims and allowing automated underwriting. Big data analytics and insurance software.	Velocity (USA) Logical Glue (UK) Ping An (China)
Internet of things	A link that makes it possible to collect data Creating a world with drones, Via smart	Octo, Cocoon (UK) Sureify (USA)

Category/concept	Description	Companies
	sensors: smart cars and homes, remote control devices.	
Blockchain& smart Contracts	Blockchain is a decentralized database for all digital transactions, which is a technology for storing information using cryptography And algorithms. Smart contracts are self-executing contracts based on Blockchain & smart contracts (DLT)	Sparkle (UK) Monax (USA) Helperbit (Italy）
Cloud (computing)	A technology for storing files on the Internet, so that they can be accessed anywhere and at any time	An (China) Zhong An (China)
Artificial (intelligent/Chatbot)	The intelligence displayed by machines is used when computer programs are developed to obtain cognitive functions and solve problems. Roboadvice is a model of automated advice that has the potential to provide advice in a more effective and cost-effective manner	Tractable Insurefy (UK)
Mobile (Technology)	Smartphones and tablets with their applications will replace desktop computers to reach customers, depending on the generation of mobile networks that allow the possibility of prepayment from the phone and allow sending SMS.	Policy Bazaar (India) Root (Ohio) Dinghy (UK)

Source: Koprivica (2018).

METHODOLOGY

Study Methodology

The descriptive analytical approach was used to present the concept of technological insurance and the statistical approach was to collect and analyze data and test the study hypotheses.

Study Model

The study variables are represented in two independent variables and a dependent variable as follows:

The two independent variables: 1. The advantages provided by technological insurance. 2. The presence of factors that contribute to the application of technological insurance.

The dependent variable: Supporting the activity of insurance companies.

Study Tool

The questionnaire and the measurement scale represented by a five-point Likert scale were relied upon, and the statistical treatment used included the statistical program SPSS, and methods of descriptive statistics and inferential statistics. The questionnaire was divided into two parts:

The first section includes the identifying characteristics of the sample individuals. The second section consists of the following 3 axes: 1. The advantages provided by technological insurance. 2. The presence of factors that help in implementing technological insurance. 3. The dependent variable paragraphs.

Testing the apparent validity: In order to verify the validity of the tool, the accuracy of the questionnaire paragraphs, its clarity, and its suitability to the research environment. It was presented to a group of different experts and their opinions were polled regarding the tool's ability to measure the variables of the study.

Statistical testing: Adopted Cronbach's alpha test, which is the most widely used test, and which indicates the possibility of obtaining the same information if the questionnaire is used more than once. **Table 2** shows the results of the Cronbach alpha coefficient value.

Table 2. Internal Consistency Reliability Coefficient (Cronbach's alpha)

Variables	Coefficient value	Measurement level
Independent variables combined	0.782	Good
Dependent variable Support for insurance companies' activity	0.764	Good
Total	0.841	Very good

Society and Study Sample

The society and sample of the study are represented by the Iraq insurance companies by the National Insurance Company and the Iraqi Insurance Company, the research sample was chosen based on a simple random sample. A sample consisting of company employees was selected. (80) Questionnaires were distributed randomly, and (70) questionnaires were retrieved, representing 83.33% of the total questionnaires distributed, which is a good percentage that allows us to conduct the study (**Table 3**).

Table 3. Characteristics of the Study Sample

Sex	Frequency	Ratios %
Male	28	40
Female	42	60
Career center		
Deputy General Manager	5	7
Director general	2	3
Director of the Department	32	46
Branch Manager	11	16
Other	20	28
Qualification		
Diploma	18	26
Bachelor's	44	63
Master's	5	7
Doctorate	3	4
Professional Experience		
years and more	13	19
6-10 years	19	27
11-15 year	26	37
16 years and more	12	17
Total	70	100

TEST AND ANALYSIS HYPOTHESES OF THE STUDY

This study deals with the results of the statistical analysis of a study field, which was obtained by analyzing the data included in the questionnaire (the study society). The sample of the study consists of (70) individuals.

A five-calibe scale was used in the distribution of grades as follows:

Table 4. The Distribution of Grades

Classification	Strongly agree	Agree	To some Extent	Disagree	Strongly disagree
Grade	5	4	3	2	1

The closer the result of the grade (5-3.5) the greater the intensity of the approval of the expression, which represents an average level (3.49-2.5), while the intensity of the opposition increases as (2.49-1) represents a low level.

The Independent Variable

Results of Descriptive Statistics for the Variable of Advantages Provided by Technological Insurance

Table 5 shows the sample members' level of assessment for the variable of advantages provided by technological insurance.

Table 5. The Sample Members' Level of Assessment

Iteam	Parapgph	Mean	Df
1	Payment is made quickly and automatically whenever the index reaches a pre-limited threshold, which provides immediate financial relief.	3.60	0.446
2	It provides inexpensive solutions available to low-income agricultural families in developing countries due to the low costs related to claims management (experience costs, assessing damages, and filing transactions).	3.96	0.59
3	Compensation is based on weather parameters issued by independent external agencies, and this enhances transparency in transactions.	3.74	0.542
4	Non-deductible. Inputs can be relied upon in financing traditional insur ance programs when bringing in clients (Companies offer discounts to a ttract customers).	3.73	0.548
5	Payment does not depend on actual losses, and therefore the behavior of the insured does not affect the probability of losses occurring (false and exaggerated statements).	3.73	0.519
6	It relies on third-party data, which reduces the risk of information asymmetry being exploited.	3.71	0.497
7	The prices for technology insurance services are consistent with the prices found in actual contracts.	359	0.449
Total		3.72	0.513

Results of Descriptive Statistics for the Variable "Existence of Factors that Help in Implementing Technological Insurance

Table 6 shows the sample members' level of assessment for the variable of the existence of factors that help in implementing technological insurance.

Table 6. The Sample Members' Level of Assessment

Iteam	Paragraph	Mean	Df
8	Insurance companies in Iraq have a website on the Internet.	3.87	0.722
9	There are indicators for the Internet and mobile phones according to several options in Iraq.	3.70	0.938
10	Insurance companies in Iraq have computers in order to carry out their roles efficiently.	3.81	0.849
11	Insurance company employees can handle the insurance technology system efficiently.	3.79	0.837
12	In most governorates of Iraq, there are weather stations that measure the weather	3.76	0.795
13	There is confidence among citizens towards insurance companies when concluding technological insurance contracts, with no risk.	3.66	0.953
14	Insurance company employees can quickly detect errors in contracts and correct them	3.66	0.866
Total		3.75	0.851

Results of Descriptive Statistics for the Dependent Variable

Table 7, the sample members' assessment of the level of availability of technological insurance in supporting the activity of insurance companies.

Table 7. The Sample Members' Assessment of the Level

Iteam	Paragraph	Mean	Df
15	The application of insurance technology allows for reducing costs for insurance companies.	3.60	0.764
16	Technology insurance contributes to shortening the time when conducting and completing insurance operations.	3.76	0.853
17	Technology insurance contributes to reducing commissions	3.63	0.73

Iteam	Paragraph	Mean	Df
	offered to insurance brokers.		
18	Insurance companies can acquire and maintain a new customer base.	3.66	0.518
19	Insurance companies can increase their capacity and enter into new fields such as agricultural insurance.	3.77	0.498
20	Insurance companies are able to better assess risks and pricing.	3.83	0.608
21	Insurance companies are able to improve their competitiveness as well as acquire new skills.	3.77	0.701
22	Technology insurance contributes to increasing individuals' insurance awareness, especially with regard to optional insurance.	3.77	0.759
Total		3.68	0.678

Hypothesis Testing

Which aims to find out whether there is a relationship. We will test the study's hypotheses statistically between the independent variables and the dependent variable, using a simple linear regression model.

Testing the First Hypothesis

H0: There is no statistically significant impact of the advantages provided by technological insurance on the activity of insurance companies in Iraq.

H1: There is a statistically significant impact of the advantages provided by technological insurance on the activity of insurance companies in Iraq.

Table 8. Simple Regression Analysis to Test the First Hypothesis

R	R^2	β1	Test F	SIG	Test T	SIG
0.767	0.582	0.767	10.427	0.00	10.071	0.000

The value of the correlation coefficient between the variable of benefits provided by technological insurance and the dependent variable was R = 0.767, which indicates the existence of a strong relationship between the two variables, the changes that occur in the coefficient of the independent variable R2 = 0.582 Determination values amounted to representing 58.2% of the changes that occurred in the dependent variable. It is considered statistically acceptable based on the value of the T-test, which reached 10.071 with a significance level of 0.00, which is less than 0.05. The degree of influence β1 reached a value of 0.767, which means that there is an influence relationship between the variables (**Table 8**).

There is a significant effect, so we reject the null hypothesis and accept the alternative hypothesis, which is a statistic of the advantages provided by technological insurance on the activity of insurance companies in Iraq.

Testing the Second Hypothesis

H0: There is no statistically significant impact of the presence of factors that contribute to the application of technological insurance on the activity of insurance companies in Iraq.

H1: There is a statistically significant impact of the presence of factors that contribute to the application of technological insurance on the activity of insurance companies in Iraq.

Table 9. Simple Regression Analysis to Test the Second Hypothesis

R	R^2	β2	Test F	SIG	Test T	SIG
0.577	0.333	0.469	33.95	0.00	5.827	0.000

The value of the correlation coefficient between the presence of factors that help in applying technological insurance. The dependent variable was R = 0.577, which indicates the existence of a relationship between the two variables, That is the changes that occur in the coefficient of the independent variable R2 = 0.333. Determination values amounted to representing 33.3% of the changes that occur in the dependent variable (**Table 9**).

It is considered statistically acceptable based on the value of the T-test, which reached a value of 0.05 from less than 0.00, with significance at the level of 5.827. The degree of influence β2 reached a value of 0.469, which means that there is an influence relationship between the variables, there is a significant effect, so we reject the

null hypothesis and accept the alternative hypothesis, which is that there are statistical factors that contribute to the application of technological insurance on the activity of insurance companies in Iraq.

CONCLUSION

Iraq has been exposed to climate changes that have affected various economic sectors, especially the agricultural sector, Methods must be found to reduce the risks resulting from this phenomenon, as Iraq is considered one of the five most affected countries. Insurance is considered one of the financial sectors that contribute to reducing the effects of climate change risks, especially if insurance information technology is used. Therefore, the research is as follows:

1. There is a statistically significant impact of the advantages provided by technological insurance on the activity of insurance companies in Iraq, this proves the validity of the first hypothesis.

2. There is a statistically significant effect of the presence of factors that contribute to the application of technological insurance on the activity of insurance companies in Iraq, which proves the validity of the second hypothesis.

3. Standard or parametric insurance targets agricultural families that are more vulnerable to climate risks, but this group often lacks an insurance culture, and this represents an obstacle to the promotion of parametric insurance, which requires the application of insurance information technology.

4. The reliance of technology companies on sensors, the uses of artificial intelligence, big data and the Internet of things will enable them to monitor climate fluctuations and determine the amount of insurance, premiums, and compensation values more accurately and with less effort and cost.

5. The results of the descriptive statistics for the variable of benefits provided by technological insurance showed that the general average of the variable is 3.72, which indicates the interest of the sample members in the first independent variable, and the low standard deviation of 0.513 from the value of the mean indicates the presence of consistency between the answers of the sample members (**Table 5**).

6. The results of the descriptive statistics for the variable “Existence of factors that help in implementing technological insurance” showed that the general average is 3.75, which means the sample members’ interest in the second independent variable, and the low standard deviation of 0.851 from the mean value indicates that there is consistency between the sample members’ answers to the questions of the second independent variable (**Table 6**).

RECOMMENDATIONS

Insurance companies in Iraq still use traditional methods, so they must adapt to modern technological developments. Concluding strategic partnerships with Insurtech companies that ensure insurance companies provide high technological capabilities and skills. Adopting a new business philosophy where innovations and technology become an integral part of the new Tamil Insurance business model, raising awareness and educating the affected segments of farmers and others about the role of technological insurance in simplifying procedures and reducing the risks they face as a result of climate change. Creating a digital culture, creativity and innovation among workers in the traditional insurance sector and motivating them to accept the idea of change.

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