


RISK MANAGEMENT IN INSURANCE INDUSTRY AMID THE HEALTH CRISIS: A STUDY OF A SAMPLE OF DAMAGE INSURANCE COMPANIES IN ALGERIA

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ARTICLE INFO	ABSTRACT
<p><b>Article history:</b>  <b>Received:</b> February, 13<sup>th</sup> 2024  <b>Accepted:</b> May, 03<sup>rd</sup> 2024</p>	<p><b>Purpose:</b> This study examined the effectiveness of risk management in the insurance industry in light of the health crisis of the Algerian insurance companies, which are estimated at 24 companies.</p>
<p><b>Keywords:</b>            Health Crisis;            Risk Management;            Damage Insurance Companies;            Identifying Alternatives;            Participatory Committees.</p>	<p><b>Methodology:</b> In this study, we used a questionnaire tool that includes closed questions, containing four axes, and we want to analyze the fourth axis, which consists of six questions. The response of 13 damages insurance companies was analyzed using the statistical program SPSS, using various statistical methods.</p>
	<p><b>Finding and Conclusion:</b> The study concluded that insurance companies rely on allocating participatory committees for all specializations to predict future risks, and this is explained by the presence of statistical significance in the level of identifying alternatives and choosing the appropriate method, in addition to most of the answers agreeing at a rate of 100% and ranked first according to the ranking of the sample phrases of the study.</p>
	<p><b>Originality/Value:</b> The findings of this study provide the dynamic adaptability of the insurance sector in response to global challenges, demonstrating its critical role in maintaining economic stability and facilitating growth during times of crisis. The findings from this study not only reflect the resilience of the sector but also underscore the importance of continuous innovation and strategic foresight in navigating the complexities of the modern economic landscape.</p>
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A GESTÃO DO RISCO NO SECTOR DOS SEGUROS NO CONTEXTO DA CRISE SANITÁRIA: UM ESTUDO DE UMA AMOSTRA DE COMPANHIAS DE SEGUROS DE DANOS NA ARGÉLIA

RESUMO

**Objetivo:** Este estudo analisou a eficácia da gestão de risco no setor dos seguros à luz da crise sanitária das companhias de seguros argelinas, estimadas em 24 empresas.

**Metodologia:** Neste estudo, utilizamos um instrumento de questionário que inclui perguntas fechadas, divididas em quatro eixos, com o intuito de analisar o quarto eixo, composto por seis perguntas. As respostas de 13 companhias de seguros de danos foram analisadas com o auxílio do programa estatístico SPSS, empregando diversos métodos estatísticos.

**Resultados e Conclusões:** O estudo permitiu concluir que as companhias de seguros confiam na atribuição de comissões participativas a todas as especializações para a previsão de riscos futuros. Isso se explica pela presença de significância estatística na identificação de alternativas e na escolha do método adequado. Além disso, a maioria das respostas apresentou uma taxa de concordância de 100% e ficou em primeiro lugar de acordo com o ranking das frases da amostra do estudo.

**Originalidade/Valor:** As conclusões deste estudo revelam a adaptabilidade dinâmica do setor dos seguros em resposta aos desafios globais, demonstrando seu papel fundamental na manutenção da estabilidade econômica e

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na facilitação do crescimento em tempos de crise. Essas conclusões não apenas refletem a resiliência do setor, mas também destacam a importância da inovação contínua e da previsão estratégica para navegar nas complexidades do panorama econômico moderno.

**Palavras-chave:** Crise de Saúde, Gestão de Riscos, Companhias de Seguros de Danos, Identificação de Alternativas, Comitês Participativos.

## LA GESTIÓN DE RIESGOS EN EL SECTOR ASEGURADOR EN PLENA CRISIS SANITARIA: ESTUDIO DE UNA MUESTRA DE COMPAÑÍAS DE SEGUROS DE DAÑOS EN ARGELIA

### RESUMEN

**Propósito:** Este estudio examinó la eficacia de la gestión de riesgos en el sector de seguros a la luz de la crisis sanitaria de las compañías de seguros argelinas, estimadas en 24 empresas.

**Metodología:** En este estudio, se utilizó un instrumento de cuestionario que incluye preguntas cerradas, dividido en cuatro ejes, y se pretendió analizar el cuarto eje, compuesto por seis preguntas. Se analizó la respuesta de 13 compañías de seguros de daños con el programa estadístico SPSS, utilizando diversos métodos estadísticos.

**Resultados y Conclusiones:** El estudio concluyó que las compañías de seguros confían en la asignación de comités participativos para todas las especialidades para prever los riesgos futuros, lo que se explica por la presencia de significación estadística en la identificación de alternativas y la elección del método adecuado. Además, la mayoría de las respuestas estuvieron de acuerdo en una tasa del 100% y ocuparon el primer lugar según la clasificación de las frases de la muestra del estudio.

**Originalidad/Valor:** Los hallazgos de este estudio muestran la adaptabilidad dinámica del sector asegurador en respuesta a los desafíos globales, demostrando su papel crítico en el mantenimiento de la estabilidad económica y facilitando el crecimiento en tiempos de crisis. Las conclusiones de este estudio no solo reflejan la resistencia del sector, sino que también resaltan la importancia de la innovación continua y la previsión estratégica para navegar por las complejidades del panorama económico moderno.

**Palabras clave:** Crisis de Salud, Gestión de Riesgos, Compañías de Seguros de Daños, Identificación de Alternativas, Comitês Participativos.

## 1 INTRODUCTION

In everyday life, individuals are exposed to various risks that can lead to psychological or material losses, or both. To mitigate these risks, the concept of insurance was developed. It provides a safeguard against future mishaps by offering a precautionary measure to avoid potential losses that are unpredictable in magnitude and severity, and the subsequent repercussions they may entail (Outreville, 2012; Oscar Akotey & Abor, 2013; Shafau & Johncally, 2022).

In modern societies, where it is impractical for individuals to amass in sufficient numbers to collectively face risks, insurance companies have emerged to offer protection by compensating for losses, paying damages, and safeguarding individuals and their assets (Foucault, 1991; Kunreuther, 1996; Beck et al., 2009).

The role of insurance has evolved into an economic function that involves mobilizing the savings of individuals and companies and investing these funds in various sectors. In the current century, the scope of insurance has expanded significantly, driven by the evolution of

economic and social systems, the complexities of modern life, increased risk factors, and urban population density (Outreville, 2012; Outreville, 2013).

Insurance now covers a wide array of natural events, such as death and diseases affecting animals and plants (Fisher et al., 2012), in addition to risks arising from wars and air travel post the advent of airplanes, including accident and machinery breakdown coverage, debt and civil liability insurance, non-professional liability such as that of doctors or surgeons, as well as coverage for diseases and epidemics (McLean, 2006; Hodge Jr et al., 2006).

Furthermore, with advancements in science and technology, such as the use of atomic energy in nuclear tests, space exploration, and satellite development, the variety of insurance products and contracts has diversified and will continue to evolve as long as scientific progress remains unbounded.

Rarely has the threat posed by any disease captured our attention as intensively as it has in recent months. Media outlets around the world have extensively reported on the risks of epidemic diseases to humanity, heightening public anxiety and impacting mental health. The pervasive fear of infection encourages vigilance and adherence to social distancing and other preventive measures (Organization, 2013; Dubey et al., 2020).

Insurance companies, acting as custodians, play a crucial role in protecting individuals and organizations from financial losses due to foreseeable and unforeseeable risks by compensating the insured for partial or total observed losses, through premiums paid by the insured (Ericson & Doyle, 2004; Outreville, 2012). Therefore, insurance serves as a financial mechanism to manage disasters, and among the risks that can impose severe losses are epidemic diseases, which can incur substantial costs or devastate lives (Denenberg, 1963; Cummins & Weiss, 2013).

Additionally, there exist risks that are uninsurable as well as those that are insurable; these distinctions often arise from an insurance company's limitations in covering certain risks. To prevent facing substantial expenses, such as those experienced during the swine and bird flu outbreaks, insurance companies must proactively estimate the potential costs of medical treatments in cases where clients are covered by health policies (Ericson & Doyle, 2004; DAS, 2021).

Several insurers specializing in life and property have disclosed that the lack of coverage for epidemic diseases became particularly evident with the onset of COVID-19, which emerged in February 2020 and persisted into early 2022 (Murphy, 2010; Zelizer, 2017). The rapid spread

of this disease can be attributed to inadequate adherence to social distancing and quarantine measures mandated for all individuals, regardless of nationality.

In response to these challenges, this study aims to critically evaluate the effectiveness of risk management practices within the insurance industry, particularly in relation to the health crisis that has significantly affected damage insurance companies. To comprehensively assess this situation, the following central question will be explored:

How effective is risk management in the insurance industry with respect to managing the impacts of health crises on damage insurance companies?

To address the multifaceted nature of this issue, we will examine the following sub-questions:

- to what extent should participatory committees be mandated across all classifications of insurance companies to anticipate and manage future risks?
- is there a requirement for local emergency resolutions by insurance companies to effectively handle this health crisis?
- how critical is the integration of digital transformation within the insurance sector, tailored to the specific needs and specializations of the industry, to ensure its ongoing relevance and effectiveness?

## 1.1 RESEARCH HYPOTHESES

In order to address the issues identified and answer the sub-questions posed, this study formulates the following hypotheses:

- insurance companies establish participatory committees across all specialties to effectively predict future risks;
- insurance companies do not require a local emergency mechanism to manage emergencies;
- digital transformation is a necessary and inevitable cultural shift within insurance activities;

## 1.2 RESEARCH IMPORTANCE

The significance of this research is derived from its ability to elucidate the unique aspects of damage insurance companies and to understand the intricacies of their technical operations, which fundamentally involve managing risks that threaten diverse economic activities.

Insurance becomes increasingly vital during times of heightened risk, prompting a rise in the demand for its products, particularly in the domains of life and medical insurance.

## 1.3 RESEARCH OBJECTIVES:

This research aims to achieve the following objectives:

- to facilitate the financing of emerging institutions through initiatives by the Bank of Algeria, which necessarily leads to an increase in financing activities. Consequently, this growth in financing drives a corresponding increase in insurance activities;
- to foster collaboration between insurance companies and banks to mitigate the risks of non-payment through what is known as credit insurance. This collaboration benefits from the banks' expanded financing of small and medium enterprises in response to the initiatives of the Bank of Algeria, thereby supporting the state's efforts to create job opportunities for youth and enhance national economic growth and development rates;
- to create a qualitative transformation that aligns with developments in the insurance markets. This includes elevating the standards of life insurance, enhancing support for small and medium enterprises, advancing digital transformation, addressing piracy, and developing comprehensive reinsurance plans for insurance companies.

## 2 INTRODUCTION TO THE INSURANCE COMPANIES

Although the concept of insurance can be traced back several centuries, the formal establishment of insurance companies as recognized entities did not occur until much later, culminating with the founding of the Fire Insurance Office of London in 1666 AD. The recurrence of accidents and disasters has been a primary catalyst for the emergence of these companies. This section will comprehensively explore the essential aspects of these companies and their benefits (Cooke & Rohleder, 2006; Turner, 2020).

### 2.1 THE CONCEPT OF INSURANCE COMPANY

An insurance company, acting as the first party in an insurance contract, commits to compensating for material losses in exchange for receiving either a single premium or a series of premiums paid regularly. These premiums collectively amount to less than the potential total of the compensation.

Essentially, the insurer promises to pay a predetermined compensation to the insured party or a designated beneficiary upon the occurrence of a specified risk, in return for an agreed-upon premium.

Christian Sainrapt also contends that an insurance company is an entity authorized by public authorities, obtaining compulsory accreditation to engage in specified insurance activities as outlined in its accreditation. Predominantly, insurance organizations operate as commercial enterprises, with most being joint-stock companies due to their substantial capital requirements and extended longevity.

Thus, it is evident that insurance companies maintain a contractual advantage with their clients through the insurance coverage documents they issue. In these documents, they pledge to compensate the insured public if the covered risks materialize. In return, they receive predefined installments or subscriptions over a designated period, during which the insurance company invests the accumulated premiums with the objective of generating returns to meet its obligations to its customers (Doherty & Dionne, 1993; DiMatteo, 2010).

## 2.2 ADVANTAGES OF INSURANCE COMPANIES

Insurance companies boast several distinctive features that set them apart from other businesses and financial institutions (Epetimehin, 2011; Sari et al., 2022):

Insurance companies are highly regulated financial institutions, particularly in the realm of capital investment. They are mandated to maintain specific investment ratios, adhering to strict legal texts and regulations. This is crucial for ensuring their capability to meet the obligations owed to policyholders:

- these companies not only provide compensation contracts to their customers but also invest the premiums they receive to fulfill their obligations and generate profit. This dual role defines them as contractual financial institutions, fostering mutual commitments between the company and the insured populace;

- the services offered by insurance companies are characterized by their deferred nature rather than being instantaneous. Pricing is fixed based on mathematical principles and probabilities, making them independent of the conventional laws of supply and demand;
- the strategic goals and obligations of insurance companies drive them to focus on investing in legally specified, less risky areas. This approach ensures more stable and secure investment returns;
- insurance companies experience a unique reversal in the production cycle. The nature of their business means that they only realize their income in the future, as the long-term obligations toward their customers span several years from the date of subscription. The return on these investments is inferentially determined based on the company's experience and the actual losses incurred.

## 2.3 CLASSIFICATION OF INSURANCE COMPANIES

Insurance is offered by a diverse array of companies, each varying based on legal structuring and the nature of the services provided. Here, we identify two main classifications of insurance companies: one based on their legal form and the other on the types of insurance activities they engage in (Worham, 1985; Marin et al., 2019). These classifications are detailed in Table 1, which delineates the specific categories and their corresponding.

### 2.3.1 Classification of insurance companies according to legal form

The legal form classification of the insurance firms is shown in the table below:

**Table 1**

*Classification of insurance companies according to legal form*

Properties	Joint stock company (commercial)	Cooperative Insurance Company
Legal nature	Commercial (aimed at making profits)	Not for profit
capital	Social capital minimum required	Minimum start-up funds required
Number of partners	Minimum 7 partners	500 members (trusted)
Insured contribution	Fixed installments	Fixed or variable deductions
Insurance operations practice	All branches of insurance with the principle of specialization	Life insurance only

Source: Prepared by the researcher based on the reference (Couilbault, f., 2009).



### 2.3.2 Classification according to insurance activities

Insurance companies can be categorized based on the types of insurance activities they engage in. These categories include life insurance companies, health insurance companies, property and casualty insurance companies, and comprehensive insurance companies. Each category is detailed below (Worham, 1985; Marin et al., 2019):

#### 2.3.2.1 Life insurance companies

Life insurance companies offer products related to the life or death of the insured, as well as combined policies known as mixed insurance. Policies may provide a payout upon the insured's survival or only in the event of their death. In the latter case, the insurance amount is paid to designated beneficiaries. Mixed insurance policies guarantee a payout regardless of whether the insured survives or passes away (Quinn, 2008; Brockett et al., 2008).

#### 2.3.2.2 Health insurance companies

These companies specialize in underwriting policies that commit to covering the insured's medical treatment and medication costs if they contract a specified illness. Coverage can be individual or group-based. It is common to find companies that offer both life and health insurance; these are typically referred to as personal insurance companies (Devadasan et al., 2004; Mavalankar & Bhat, 2000).

#### 2.3.2.3 Damage insurance companies (general insurance)

Specializing primarily in property insurance and civil liability coverage, these companies protect against risks to an individual's or business's property, this includes assets and movables, such as from fire, theft, or damage to vehicles. Civil liability coverage provides protection against claims from third parties for damages resulting from the insured's actions. This coverage is crucial in policies like those for automotive and fire insurance (Spekkers et al., 2011; Boys, 2013).



#### 2.3.2.4 Comprehensive insurance companies

Comprehensive insurance companies are versatile as they do not specialize in a single branch of insurance. Instead, they issue all types of insurance policies covered by the aforementioned categories. They are essentially all-encompassing entities that handle a wide range of insurance operations, covering both the personal and property interests of the insured.

### **3 RISKS RELATED TO THE INSURANCE INDUSTRY AND THE MACROECONOMIC**

#### 3.1 RISKS RELATED TO THE INSURANCE INDUSTRY

The insurance industry encounters various risks that can significantly influence its operations and financial stability. These risks include:

##### **3.1.1 Legal risks**

Legal risks arise from changes in the laws and legislation that regulate the insurance industry within each country. Such changes often aim to enhance economic and social protections for the insured, which may not align with the interests of insurance companies. This is particularly critical when amendments or new regulations pertain to insurance coverage documents that are technically complex and are deemed socially necessary. Insurance companies must continuously monitor and adapt to these legal changes to align their operations with the updated regulatory requirements and to maintain their service offerings within the legal framework (Rosser, 2021).

##### **3.1.2 Risks of market changes**

Insurance companies also face risks associated with market dynamics, including competition and changes in consumer behavior and needs regarding their products. To mitigate these risks, insurance companies employ strategic marketing approaches. These strategies may include setting competitive premiums, introducing new products, and utilizing various

distribution channels, all while complying with the industry's regulatory legislation (Spekkers et al., 2011; Boys, 2013).

### 3.2 MACROECONOMIC RISKS

Macroeconomic risks encompass a broad range of factors including economic, social, political, technological, and environmental influences that indirectly affect the insurance industry. Typically, these risks are beyond the direct control of any single insurance company and can impact the industry in profound and unpredictable ways (Juszczuk et al., 2020; Neilbergs, 1998):

- **changes in the market value of investments:** this risk is linked to fluctuations in the market values of assets and their returns, influenced by various economic conditions such as low interest rates, financial market collapses, or a decline in real estate values. Such shifts can significantly alter the asset landscape, necessitating vigilant management and responsive strategies to mitigate potential losses;
- **inflation rate risk:** increasing inflation rates pose a significant risk, particularly impacting medium and long-term bonds. Insurance companies are obligated to pay the true value of these bonds, making it crucial to account for this risk when calculating technical allocations. This ensures financial stability and accurate financial planning within the industry;
- **exchange rate risk:** this risk arises when assets are invested in a currency different from that of the obligations, creating a mismatch that can affect the insurer's financial health. To mitigate this risk, it is advisable for assets to be aligned with the currency of the liabilities. Furthermore, the risk of currency value fluctuations becomes a critical consideration, especially for companies with investments in foreign markets;
- **economic cycle risk:** economic changes, particularly recessions, directly impact the insurance industry by reducing demand for insurance products. This results in a decline in premium volumes, fewer new operations, and an increased incidence of contract cancellations, particularly affecting policies like life insurance during economic downturns;
- **risk of social and political changes:** social and political dynamics, including demographic shifts and consumer behavior changes, significantly influence the insurance sector. For instance, an increase in mortality due to new diseases adversely

affects life insurance, while heightened crime rates can lead to more claims in property and casualty insurance. Moreover, political instability, whether due to internal conflicts or external threats, can escalate the frequency and severity of claims, profoundly impacting the insurance industry;

- **risk of ocean changes:** the increasing occurrence of natural disasters such as earthquakes, floods, and storms represents a considerable risk. These events can cause extensive material and physical damage, challenging the insurance industry to develop robust disaster response strategies and innovative insurance products to cover such risks;
- **risk of technology change:** the rapid advancement of technology poses risks to the insurance industry, particularly when technological failures or malfunctions occur within automated systems. This risk necessitates ongoing technological assessments and updates to ensure operational integrity and to leverage technological advancements for improved service delivery and enhanced risk management.

#### 4 THE NEGATIVE EFFECTS OF THE HEALTH CRISIS ON THE INSURANCE SECTOR

Regarding life insurance, the economic shutdown has severely impacted the marketing of life insurance products. The demand for new policies has significantly diminished, primarily due to the cessation of work among a large portion of irregular workers. Consequently, their income levels have been adversely affected by widespread unemployment, leading to reduced financial capacity to invest in life insurance (Inwood, 2017; Patterson et al., 2020).

Insurance producers and brokers face considerable challenges in marketing their products under current economic conditions. Their income, which is closely tied to the fulfillment of sales targets dictated by their respective insurance plans, has suffered due to the overall decrease in consumer spending power. This situation makes it increasingly difficult for them to effectively promote and sell insurance during this economic downturn (Richmond, 2004; Schwarcz & Siegelman, 2015).

The health crisis has led to increased healthcare costs, which in turn has influenced the pricing of private medical insurance. The incorporation of new pricing elements to cover the escalated costs associated with medical examinations, treatments, tests, and hospital stays has driven up the prices of health insurance policies (Yu & Dick, 2012).

The halt in production and the associated health risks, such as the risk of premature death and the necessity for heads of families with chronic diseases to leave their jobs, have placed a significant burden on these individuals and their families. They find themselves unable to meet life's expenses, thereby necessitating state intervention to provide for the affected weak segments of the population (Organization, 2002).

The economic slowdown has stunted growth rates and caused disruptions in the financial markets, while the services sector has been particularly hard hit by the repercussions of the economic recession. This downturn is a direct result of the stringent health precautions implemented by various countries to shield their populations from the virus, imposing both an economic and a humanitarian burden on these nations (McNally, 2009).

The pervasive and exaggerated fear stirred by the health crisis is likely to have long-term effects on individuals' psychological immunity. This prolonged state of fear can undermine mental resilience, potentially leading to an increased need for psychological support services in the future.

## **5 APPLIED FRAMEWORK**

### **5.1 PROCEDURES**

In response to the challenges posed by the ongoing health crisis, which has significantly disrupted various sectors, it was critical to establish a robust scientific foundation for this study. The primary goal was to thoroughly assess the core issues being investigated. To achieve this, the chosen research approach incorporated a field method, combining descriptive and analytical techniques to scrutinize the data meticulously. The research spanned from April 15 to April 30, 2021, and focused primarily on evaluating how insurance companies have adapted their risk management strategies to address the challenges presented by the health crisis. This included a detailed examination of the measures implemented by these companies to mitigate damage and manage risks during this turbulent period.

### **5.2 RESEARCH POPULATION AND SAMPLE SELECTION**

The research methodology was tailored to suit the nature of the primary data collected in the field. This involved following rigorous scientific procedures to select a representative

sample from the targeted population. The study concentrated on the Algerian insurance market, specifically companies that specialize in damage insurance. The sample comprised 24 Algerian insurance companies, providing a comprehensive overview of the industry's response to the health crisis. This subset included a diverse array of companies to ensure a broad representation of the industry's practices.

### 5.3 RESEARCH METHODOLOGY

The collection of essential primary data was facilitated through the use of a specially designed questionnaire form. This instrument was selected for its effectiveness in gathering the necessary information across a wide array of topics relevant to the study. A total of 24 questionnaires were distributed among the selected companies, which included 13 firms specializing in damage insurance, 8 private insurance companies focused on individual coverage, and 3 public sector companies with specific areas of focus, one in reinsurance and two others in loan insurance, covering sectors such as export and real estate.

Out of the total questionnaires distributed, 13 were returned completed and were valid for statistical analysis. These responses were exclusively from companies dealing with damages. The remaining 11 companies, including the personal insurance and specialized public companies, did not participate, citing concerns over the risk of infection transmission through paper contact during the epidemic.

The questionnaire was structured to probe into four main themes, with the focus here on the responses to the fourth theme. This theme was structured to uncover insights into three key dimensions of risk management: defining the goal, assessing the risk, and identifying available alternatives. Each dimension was explored through two statements, allowing for a nuanced understanding of the companies' approaches to handling crises.

#### **Table 2**

##### *Lickarth triple scale*

1	2	3
Disagree	Neutral	Agree

The analysis of the responses employed the Lickarth triple scale, which facilitates a clear interpretation of the attitudes and practices regarding each statement. The scale operates with three points: 1 for 'Disagree', 2 for 'Neutral', and 3 for 'Agree'. The calculation of cell

lengths within this scale involved determining the range by subtracting the lowest scale value (1) from the highest (3), resulting in a range of 2. This range was then divided by the number of cells, which is 3, to yield a cell length of 0.66. This metric was subsequently used to calibrate the minimum value for each cell, enhancing the precision of the analysis based on the structured responses from the sampled insurance companies:

**Table 3**

*The three-way Lickarth’s scale used*

Direction "Interpretation"	Degree	The arithmetic mean value of the weights for the tripartite Lickart ‘s scale
Disagree	1	from 1 to 1.66
Neutral	2	from 1.66 to 2.33
Agree	3	from 2.34 to 3

Source: Prepared by the researcher

**6 THE FOUNDATIONAL THEMES OF THE STUDY ARE OUTLINED AS FOLLOWS**

**Table 4**

*The first axis: relates to the characteristics of the sample that includes types of insurance companies.*

Statement	frequency	Rate
Personal insurance	08	33.33%
Damage insurance	13	54.17%
Mixed insurances	03	12.5%
Total	24	100%

Prepared by the researcher based on various sources from the National Insurance Council

**Table 5**

*The second axis: relates to measuring the legal nature of insurance companies*

Statement	frequency	Rate
Private	08	33%
General	<b>06</b>	<b>25%</b>
Mixed	04	17%
Mutual	03	12.5%
Specialized General	03	12.5%
Total	24	100%

Prepared by the researcher based on various sources from the National Insurance Council

**Table 6**

*Third axis: Classification of insurance companies according to their subject matter*

The axis	Frequency	General Percentage	Frequency	private Percentage	Frequency	mixed Percentage	Frequency	mutually Percentage	Frequency	Total Percentage
T-people	02	8.33%	02	8.33%	03	12.5%	01	4.16%	08	33.33%
T-Damages	04	16.66%	06	25%	01	4.16%	02	8.33%	13	54.17%
Specialized	03	12.5%							03	12.5%
General										
<b>Total</b>									<b>24</b>	<b>100%</b>

Prepared by the researcher based on various sources from the National Insurance Council

From the analytical results derived from the two tables, we observe that 54.17% of the sample, which comprises companies specializing in damage insurance, dominates in popularity among individuals when compared to other insurance types. This significant proportion underscores the pivotal role of damage insurance in the market. In contrast, mixed insurance represents a smaller fraction, with only 12.5% of the total value, indicating its lesser prevalence among the sampled companies.

## 7 THE FOURTH AXIS

This axis focuses on determining the position of insurance companies that specialize in damages according to their organizational dimensions. This particular axis was the primary target of the questionnaire, which was meticulously designed and constructed based on Lickarth’s scale. It is noteworthy that the companies associated with the other three axes opted not to participate in the survey, citing the ongoing epidemic and the potential risk of infection transmission through the physical handling of paper.



**Table 7**

*Fourth axis: Assessing the standing of damage-specialist insurance businesses based on their size*

Dimensions	Statement	Scale	1- Disagree	2- Neutral	3- Agree	Arithmetic Mean	Standard Deviation	Coefficient of Variation																																																																																							
	Insurance companies contribute their accumulated, unused funds due to the absence of accidents by traveling to laboratories and hospitals for the purpose of acquiring medical equipment to confront the crisis.	Number	04	0	09	2.38	0.97	0.40																																																																																							
		Rate	30.76%	0%	69.23%				Determining the purpose	Companies rely on forecasting for early detection of risk Epidemiological, based on the efforts of the Scientific Committee	Number	03	0	10	2.53	0.90	0.35	Rate	23.07%	0%	76.92%	Total						2.45			Risk assessment	Companies rely on allocating a participatory committee for all specializations to predict future risks	Number	0	0	13	3	2.08	0.69	Rate	0%	0%	100%	Risk assessment	Digital transformation is an inevitable culture that has begun to penetrate insurance activities thanks to quarantine	Number	0	3	10	2.76	0.49	0.17	Rate	0%	23.07%	76.92%	Total						2.88			Identify alternatives and choose the appropriate method	Companies rely on developing strategies In line with the crisis situation depending on the device Local emergency response	Number	0	1	12	2.92	0.31	0.10	Rate	0%	7.69%	92.30%		Insurance companies enter into new existing activities On the principles of the Takaful system according to the Supplementary Finance Law 2020	Number	4	4	5	2.07	0.88	0.42	Rate	30.76%	30.76%	38.46%	Total			
Determining the purpose	Companies rely on forecasting for early detection of risk Epidemiological, based on the efforts of the Scientific Committee	Number	03	0	10	2.53	0.90	0.35																																																																																							
		Rate	23.07%	0%	76.92%				Total						2.45			Risk assessment	Companies rely on allocating a participatory committee for all specializations to predict future risks	Number	0	0	13	3	2.08	0.69	Rate	0%	0%	100%	Risk assessment	Digital transformation is an inevitable culture that has begun to penetrate insurance activities thanks to quarantine	Number	0	3	10	2.76	0.49	0.17	Rate	0%	23.07%	76.92%	Total						2.88			Identify alternatives and choose the appropriate method	Companies rely on developing strategies In line with the crisis situation depending on the device Local emergency response	Number	0	1	12	2.92	0.31	0.10	Rate	0%	7.69%	92.30%		Insurance companies enter into new existing activities On the principles of the Takaful system according to the Supplementary Finance Law 2020	Number	4	4	5	2.07	0.88	0.42	Rate	30.76%	30.76%	38.46%	Total						2.49										
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Source: Prepared by the researcher based on the outputs of the spss program

**Table 8**

*An overview of the results for the research variables.*

Variable	Global Arithmetic mean
Determining purpose	<b>2.45</b>
Risk assessment	<b>2.88</b>
Identify alternatives and choose the appropriate method	<b>2.49</b>

Source: Prepared by the researcher based on the outputs of the spss program

**Table 9**

*An analysis of the questionnaire using the triple LIKERT scale approach.*

Question number (mentions)	Arithmetic mean	Standard deviation	Percentage	Sample trend	Sample test	Question rank
1	2.38	0.97	79.33%	Agree	1.46	5
2	2.53	0.90	84.33%	Agree	2.12	4
3	2.76	0.49	%92	Agree	5.84	3
4	3	2.08	100%	Agree	1.75	1
5	2.07	0.88	69%	Neutral	8.33	6
6	2.92	0.31	%97.33	Agree	11.5	2

## 8 QUALITATIVE ANALYSIS

The qualitative analysis delves into specific questions from the survey. For instance, the first question probes into the extent to which insurance companies are willing to allocate their accumulated, untapped funds to support laboratories and hospitals by providing medical equipment essential for combating the health crisis. This question ranks fifth in terms of agreement among the respondents, with 79.33% of the participants indicating their concurrence. The arithmetic mean for this response stood at 2.38, reflecting a substantial level of agreement. The coefficient of variation for this item was recorded at 0.40, which is below the threshold of 0.5.

This lower variation indicates a strong consensus among the respondents, suggesting that the majority believe that damage insurance companies are capable of managing losses from the risks they face using their own resources. Additionally, the overall arithmetic mean for the sample's responses was calculated at 2.45, further demonstrating a general agreement among the participants that the companies clearly define their objectives in risk management:

- **the second question** probes the extent to which insurance companies depend on forecasting to detect epidemic risks early, with contributions from the Scientific Committee. A notable 84.33% of respondents agreed with this statement, which underscores the reliance on scientific expertise to navigate the uncertainties presented by the epidemic. The arithmetic mean for this response was 2.53, indicating a strong

agreement across the board. This agreement is further supported by a coefficient of variation of 0.35, demonstrating a low level of dispersion in the responses. This finding illustrates that forecasting, underpinned by scientific analysis, is a critical component of the strategic response to managing epidemic risks among companies specializing in damage insurance;

- **the third question** received an agreement from 92% of participants, reflecting a widespread acknowledgment of the integral role of digital technology during the pandemic. Addressing the impact of quarantine on accelerating digital transformation within the insurance sector, the arithmetic mean here was 2.76, signaling robust agreement. The very low coefficient of variation of 0.17 suggests a highly consistent recognition among companies of the necessity of digital transformation as an adaptive strategy in response to enforced physical distancing and remote operations;
- **the fourth question**, which focused on the reliance on a participatory committee encompassing various specializations for predicting future risks, saw unanimous agreement, with 100% of respondents recognizing its importance. This strong consensus is indicated by an arithmetic mean of 3. The higher coefficient of variation of 0.69, however, suggests some variability in how strongly participants agree, possibly reflecting differences in how such committees are implemented or perceived in effectiveness across companies;
- **the fifth question**, regarding the entry of insurance companies into activities based on the Takaful system under the Supplementary Finance Law 2020 saw 69% neutral responses, reflecting a significant uncertainty or transition phase regarding the adoption of these new practices. The lack of statistical significance in these responses indicates a cautious or exploratory approach to this new legal framework, possibly awaiting clearer outcomes or more definitive regulatory guidance;
- **the sixth question** assessed how companies have developed strategies that align with the crisis situation, leveraging local emergency response mechanisms. An overwhelming 97.33% agreed, highlighting a proactive stance in integrating local crisis response capabilities into strategic planning. The arithmetic mean of 2.92 and a low coefficient of variation of 0.10 reflect a strong and consistent agreement on the effectiveness of these strategies.

## 9 CONCLUSION

The insurance sector holds a pivotal role in bolstering the national economy. Insurance companies contribute significantly through their operational functions. Notably, these companies ensure safety for the insured, fostering an environment of comfort and reassurance. This not only boosts the morale of the insured but also enhances their productivity. Additionally, these companies play a crucial role in financing various economic projects by utilizing collected premiums in diverse investment forms, thereby increasing productive efficiency and preserving the wealth being utilized.

Furthermore, the insurance sector plays a vital role in strengthening both credit and commercial confidence. It also holds significant importance in international transactions and contributes to the national income by realizing value through the benefits it provides.

Based on the objectives outlined and the importance underscored by this research, combined with the results from detailed statistical analyses, several critical conclusions have been drawn:

- the formation of participatory committees across specializations to forecast future risks has emerged as a top strategy, with unanimous agreement among respondents (100%). The significant statistical significance of these findings is underscored by an arithmetic mean of 3. However, a coefficient of variation at 0.69 indicates a notable dispersion in responses, suggesting varying degrees of agreement or implementation effectiveness across the companies surveyed;
- strategies developed by insurance companies to align with crisis situations, particularly those leveraging local emergency response mechanisms, were highly effective, with 97.33% of respondents agreeing. The statistical significance of these results is reflected in the arithmetic mean of 2.92. The low coefficient of variation of 0.10 suggests a strong consensus among the participating companies regarding the efficacy of these strategies. The overall arithmetic mean of 2.49 further confirms widespread agreement on the capability of these companies to adapt their risk management practices to the current crisis;
- the imperative of digital transformation in the insurance sector, accelerated by the quarantine measures, was acknowledged by 92% of the respondents. The arithmetic mean of 2.76 indicates a high level of agreement that digital transformation is essential. With a low coefficient of variation of 0.17, the responses show a strong consensus on the integration of digital technology into insurance practices. The total arithmetic mean of 2.88

reinforces the widespread acknowledgment among the companies surveyed of the need to incorporate digital approaches into their risk assessment and management strategies.

These conclusions highlight the dynamic adaptability of the insurance sector in response to global challenges, demonstrating its critical role in maintaining economic stability and facilitating growth during times of crisis. The findings from this study not only reflect the resilience of the sector but also underscore the importance of continuous innovation and strategic foresight in navigating the complexities of the modern economic landscape.

## 10 HYPOTHESES RESULTS

- **The first hypothesis:** It is confirmed as entirely correct. This hypothesis posited that "Insurance companies establish participatory committees across all specialties to effectively predict future risks." The experimental post-test results support this, showing no statistically significant differences at the significance level ( $\alpha \leq 0.05$ , score 1.75), indicating robust statistical support. The unanimous agreement rate of 100% among respondents and its first-place ranking among the study's statement samples further substantiate this finding. The establishment of such committees across various specializations enhances the companies' ability to forecast and manage potential risks effectively, proving essential in maintaining resilience and adaptability in a volatile environment;
- **the second hypothesis :** This is determined to be partially correct. It suggested that "Insurance companies do not require a local emergency mechanism to manage emergencies." The experimental results revealed no statistically significant differences at the  $\alpha \leq 0.05$  level, with a score of 11.5, demonstrating a significant consensus on the efficacy of having a local emergency response strategy. This strategy is critical in promptly addressing and mitigating crises as they arise. The high agreement rate of 97.33% and its ranking as the second statement in the sample underscore the importance of localized and immediate response mechanisms within the insurance sector;
- **the third hypothesis:** This hypothesis is validated as true, asserting that " Digital transformation is a necessary and inevitable cultural shift within insurance activities." The experimental results show no significant differences at the  $\alpha \leq 0.05$  significance level, scoring 5.84, which indicates strong statistical backing for this approach. The agreement rate of 92% and its third-place ranking emphasize that the integration of

digital transformation into insurance activities is not only inevitable but essential. The development of digital platforms that provide timely and accurate information about infectious diseases and epidemics is crucial for enhancing the industry's capability to manage associated risks effectively;

- These findings illustrate a clear trajectory toward more integrated, responsive, and technologically equipped risk management practices in the insurance industry. They highlight the sector's ongoing commitment to adapting its strategies to effectively confront and mitigate the impacts of global health crises and other emergent risks.

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