# The Impact of the Insurance, and Maritime Safety on the Management of Iraqi Maritime Vessels
# ((A comparative study between insured and, uninsured vessels))

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## *Abstract*

The research aims to stimulate the activation of marine insurance in the vessel that does not have marine insurance. In addition, knowing the extent of the impact of marine insurance when available in raising the level of application of maritime safety standards in marine pieces that do not have marine insurance. The researchers have taken a community to study both insured vessels belonging to (General Company for Maritime Transport & Iraqi Oil Tanker Company) and uninsured that belong to (General Ports of Iraq & Um Qasr Naval Base Command). The researchers designed the Model to achieve the objectives of the research. Through the Model we can clarify the nature of the impact between the main variables of the research which is the first independent variable (marine insurance), and the second independent variable (maritime safety). A 363 questionnaire form have been distributed to employees working in insured marine vessels and 615 questionnaires to the employees who are working in uninsured marine vessels for the purpose of conducting a comparative study. (the current research has relied on statistical analysis programs SPSS. V.23, EXCEL V.10). The results of the statistical analysis have reached the acceptance of the hypothesis aimed at clarifying the effect relationship between the first

independent variable (marine insurance) and the second independent variable (maritime safety) in the dependent variable (marine craft management).

**Keywords:- "Maritime hazards**, maritime **losses, Maritime security safety, safe maritime navigation, maritime search and rescue, maritime agreements, maritime classification.**

**المستخلص**

يهدف البحث إلى تفعيل ألتامين البحري في القطع التي ليس لديها تأمين بحري. بالإضافة إلى معرفة مدى تأثير ألتامين البحري عند توفره لرفع مستوى تطبيق معايير السلامة البحرية في القطع البحرية التي ليس لديها تامين بحري فقد أخذ الباحث مجتمع دراسته الطواقم البحرية التي تعمل في كلاً من السفن المؤمنة ألتابعة الى (الشركة العامة للنقل البحري وشركة ناقلات النفط العراقية) وغير المؤمن عليها والتي تنتمي إلى (الشركة العامة لموانئ العراق وقيادة قاعدة أم قصر البحرية ). أذ قام الباحث بتصميم ألمخطط الافتراضي لتحقيق أهداف البحث ومن خلال ألمخطط الافتراضي يمكن توضيح طبيعة التأثير بين المتغيرات الرئيسية للبحث وهو المتغير المستقل الأول (للتامين البحري) والمتغير المستقل الثاني (السلامة البحرية). فقد تم توزيع 363 استمارة استبيان على الأفراد العاملين في القطع البحرية المؤمنة بينما 615 استمارة أخرى للأفراد الذين يعملون في القطع البحرية غير المؤمنة لغرض إجراء دراسة مقارنة . وتم الاعتماد على برامج التحليل الإحصائي(SPSS. V.23 ، EXCEL V.10. ) ، فقد توصلت نتائج التحليل الإحصائي إلى قبول فرضية البحث التي توضيح علاقة التأثير بين المتغير ألمستقل الأول (التامين البحري) والمتغير ألمستقل الثاني (السلامة البحرية) على المتغير التابع (إدارة القطع البحرية) .

**ألكلمات ألمفتاحية: – الأخطار البحرية ، الخسائر البحرية ، سلامة الملاحة البحرية ،آمن الملاحة البحرية ، البحث وآلإنقاذ آلبحري ، ألاتفاقيات البحرية ، ألتصنيف البحري .**

## Introduction:-

Safety was not among the concerns of peoples in ancient times. The marine accidents were considered inevitable accidents verified or the will of the goddess. The modern concepts of safety evolved in the nineteenth century as a result of the industrial revolution. The frequency and intensity of accidents vary from one country to another. Over the years public and political pressure increased to improve the safety that protects individuals and the environment. Through the development of the safety approach, there was an increasing movement towards reducing risks and which required improving safety in order to be able to operate marine vessels efficiently. Economically and safely (Bhattacharyya, et al., 2003:1) the International Convention for the Safety of Life at Sea (SOLAS) of 1974 reconvened that safety requirements must be provided in the safety maritime system (SMS). Moreover, to do everything necessary to prevent accidents, marine pollution and thus reduce marine losses in accordance with the rules in force by the International Maritime Organization (IMO) (Shukri, 2012: 531). The agreement of researchers is that most accidents are due to human errors which approximately 85% of accidents. Senior management must focus on the errors of the human element and prevent them. By providing full safety requirements Maritime hazards may occur during maritime operations to which the members of the naval mission are exposed (ship, cargo, freight) (Al-Hilbawi, 2009: 75). Due to the nature of maritime operations which work to transport individuals and cargo across the seas and for very long distances. This may expose them to many dangers caused by humans or from nature, so man has used marine insurance in

order to preserve individuals and property (Nasser, 2009: 210).

## 1.: General framework of the study:

### 1.1: Research Problem:-

The problem of the current research lies in the percentage of accidents and injuries that occurred to the uninsured marine vessels compared to the insured vessel. In addition to, the failure in the level of maritime safety standards which leads to serious maritime accidents that threaten the safety of the marine vessels and the personnel and property they carry on board. Accordingly, the following questions are addressed as: Is there a correlation and impact between insurance and marine safety in the management of marine vessels?

### 1.2: Research Objective:

Through the current research problem, we can reach the main objective of the research, which is to determine the nature of the relationship between insurance and marine safety in the management of marine vessels. In addition to activating marine insurance for uninsured marine vessels and raising the level of marine safety standards.

### 1.3: Research Importance:

The importance of the research is divided into two parts:

- **Scientific importance: -** did not address previously in Arab or foreign studies ((according to the researcher's knowledge)) Collecting research variables together in one conceptual model and here lies the importance of scientific being a modest cognitive contribution.
- **Practical importance: -** The study sample has didn't took (naval crews) in all Iraqi universities (according to the researcher's knowledge) and military naval

crews as well. Where they are considered modern of their kind.

## 1.4: Research Population and Sample:

Iraq has a number of marine ships different types, classification, and industry for multiple uses in the maritime sector including ((general cargo transport ships, liquid cargo transport ships - oil products)). It belong to (the General Company for Maritime Transport, the Iraqi Oil Tanker Company) and ((towing ships - tugs, drill ships, warships, support ships, patrol ships, and patrol boats)). These ships has belonged to (the State Company for Ports of Iraq, Um Qasr Naval Base Command). The table below shows the Population and sample of the research: -

**Table (1-1) Research Population and Sample**

| No. | Belonging to the marine vessels | Insured Marine Vessels | | Uninsured Marine Vessels | |
|---|---|---|---|---|---|
| | | Study Society | Study Sample | Study Society | Study Sample |
| 1 | General Company for Iraq Ports | - | - | 1734 | 315 |
| 2 | Um Qasr Naval Base Command | - | - | 1397 | 300 |
| 3 | General Company for Shipping | 390 | 194 | - | - |
| 4 | Iraqi Oil Tanker Company | 300 | 169 | - | - |
| Total | | 690 | 363 | 3131 | 615 |

Source: Prepared by the researcher.

## 1.5: Methods of Data collect:

The data has been collected by the researcher based on

(letters, thesis, books, research's, articles, websites) related to the research variables which has been used in the theoretical part. The statistical aspect of a checklist has been prepared to determine the research problem. Also, questionnaire form has been distributed to the research sample, which included 24 questions. the researcher has been based on the five-scale (Likert) ((I completely agree"5", agree "4", neutral "3", disagree "2", do not agree completely "1")). The data which was obtained has been used in the statistical analysis through statistical analysis programs (EXCEL V.10, SPSS.V.23) for the purpose of covering the statistical aspect. The following table shows the measures adopted in the research.

Table (1-2) Questionnaire Measurement Items

| Main variables | Subvariables | Paragraphs | Approved Scale |
|---|---|---|---|
| **Marine Insurance** | Marine Hazards<br>Marine losses | 1-4<br>5-8 | Bennett, 2001:15<br>Bouklab, 2018: 28<br>Bouklab, 2018:184 |
| **Maritime Safety** | Safety and security of maritime navigation<br>Marine Search and Rescue | 9-12<br>13-16 | Morgas, et al. , 2007:98<br>Awad, 2006: 8 |
| **Management of Maritime vessel** | Maritime Conventions<br>Marine Classification | 17-20<br>21-24 | Mihneva , 2005:24<br>Knapp , 2004: 12 |

**Source: Prepared by the researcher based on the sources above.**

## 1.6: Research Model: -

Based on previous studies and literature which agreed with the research variables. The researcher has reached to identify the first independent variable (marine insurance) and its dimensions (marine risks, marine losses). The second independent variable (maritime safety) and its dimensions (safety and security of maritime navigation, maritime search, and rescue) along with the dependent variable and its dimensions (maritime agreements, maritime classification). Accordingly, the Research Model has been designed for the research as shown in the figure below.

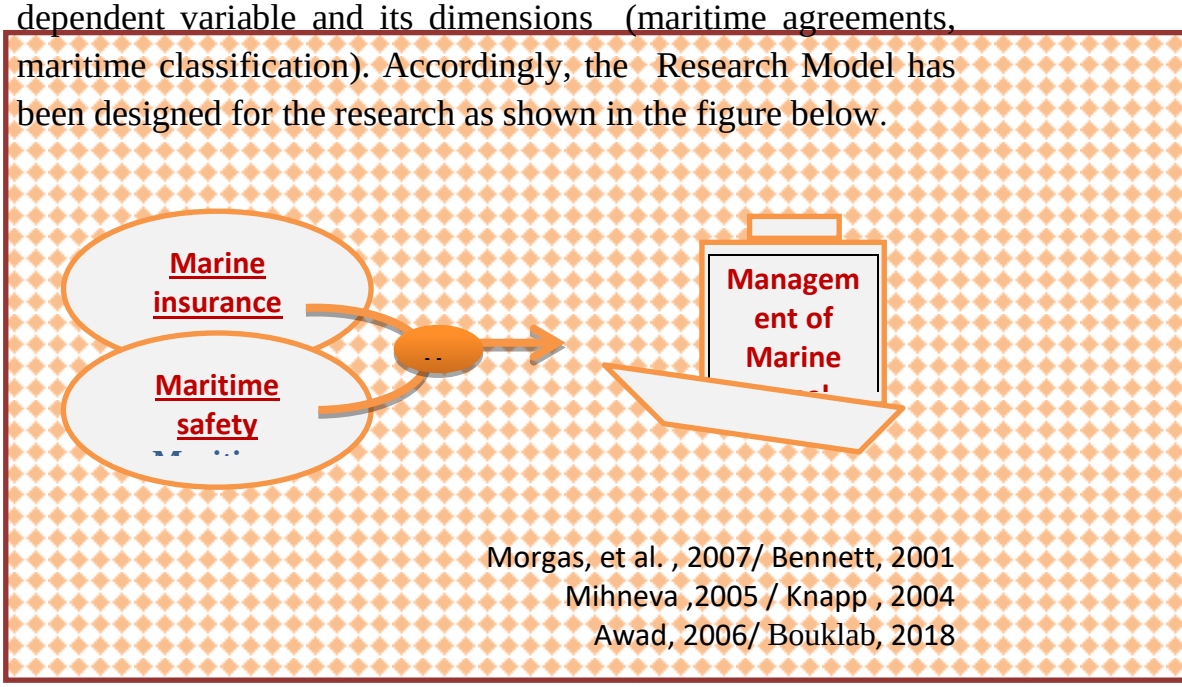


Figure (1-1) Model of research

The figure was prepared by the researcher based on the referenced sources.

The validity of the relationships between variables can be tested through the use of scientific methods such as appropriate statistical tools that help the study reach the results of these tests about what can be changed in the situation to solve the problem. Formulating testable statements is called hypothesis development (Sekaran & Bougie, 2016:83).

**Accordingly, the research hypothesis is formulated as:**

**The alternative hypothesis $H_{11}$:** There is a significant impact

relationship between the two variables insurance and maritime safety on the management of marine vessels.

**Null hypothesis $H_{01}$:** There is no significant effect relationship between the two variables insurance and maritime safety on the management of marine vessels.

## 1.7:Methods of data analysis: -

The researcher relied on statistical programs to analyze the data related to the questionnaire form:

- The research variables have been described and diagnosed based on the program EXCEL V.10.
- The influence and regression relationships between the research variables were analyzed using the SPSS. V.23 program.

## 2. Literature Review: -

In this section, the first and second independent variables and their dimensions, furthermore the dependent variable and its dimensions have been addressed.

### 2.1: The first independent variable - marine insurance: -

#### 2.1.1: The concept of marine insurance: -

Marine insurance in the Arabic language derives from security and self-assurance, Removing fear. The previous name was (cicortah), which was used in the past and is Still used in Saudi Arabia (Taha & Bunduq, 2012: 5). The concept of marine insurance has been clarified according to the opinion of a number of researchers, as Shown in the table below.

**Table (2-1) Marine Insurance Concepts**

| No. | Researcher and year | Marine insurance concepts |
|---|---|---|
| 1 | Masters, 2015 :3 | The process in which a contract is concluded and under this contract the insurer is obliged to compensate for the guaranteed loss, in the manner and amount agreed against marine losses i.e. those accidents caused by a maritime |

| | | |
|---|---|---|
| | | advertisement . |
| 2 | Pak, 2020: 21 | It is a simple commercial contract concluded between two parties (the insured and the insured for), but it differs from other insurance contracts with accuracy and clarity depending on the application of the principle of good faith during the provision of essential data in the contract . |
| 3 | Arzouki, 2021:28 | A contract that undertakes the insurer to compensate the insured in the manner and to the extent agreed in the contract against losses and damages resulting from the realization of marine risks that occur to individuals and property at sea. |

Source: prepared by the researcher based on the sources mentioned above.

### 2.1.2: The importance of marine insurance for Iraqi naval vessels: -

Marine insurance represents an important economic pillar in the development of Iraqi naval vessel. The insured ships cover individuals against work injuries as the individual is the important operational element on which depend on the success of the maritime work distinguished in its performance. Also, marine insurance covers the risks that affect others as a result of marine accidents without mention the operation of large numbers of individuals without fear as well as the importance of marine insurance (Zidane, 2009: 31):

Protecting personnel working in marine vessels from hazards and work injuries that hinder navigation. The marine insurance helps to maintain individuals without losses and thus push the wheel of economic and social safety forward to provide a safe work environment.

- Marine insurance reduces the risks to marine vessels during maritime operations.

- Compensation for damages and losses to cargos and property from marine vessels.

The importance of insurance generally stand out in "compensating for loss, getting rid of anxiety and fear, an investment source to raise money, reducing loss, strengthening documentary credit to banks" (Akkar & Sultan, 2018: 171).

### 2.1.3: Marine Hazards:

The marine risk is the main and essential element in the insurance process which is the subject of the marine insurance contract. As the failure of the existence of the marine risk results in the backwardness of the existence of marine insurance and the invalidity of the contract (Al-Gemayel, 2014: 199). The risk is defined as a potential accident that does not depend on the will of the contractors (the insured and the insured for). To achieve the marine risk, the following conditions must be met for the purpose of accepting it and compensating the insured for the risks covered in the marine insurance policy (Yaqoub, 2010: 13- 21) :

- The maritime hazard is a potential event.
- The marine risk shall not be subject to the will of one of the parties to the marine insurance contract.
- The maritime hazard must be a future accident in occurrence.
- The maritime danger shall be lawful and not contrary to the law, public morals, and social norms.
- The danger is realized as a result of maritime operations.

Marine hazards are also defined as threats to the safety and security of naval vessels and the personnel and property they

carry on board. The risk is the main element and characteristic of the marine insurance contract (Bouklab, 2018: 27) which is agreed with (Taha, 2018: 501).

### 2.1.4:Maritime Losses: -

Marine losses mean all damages to ships or Cargo or all money and expenses spent on the ship and Cargo during maritime operations whether at sea or in ports (Al-Qarni, 2012: 277). (Abdel Hassan, et al., 2020: 137) defined marine losses as all damages that occur to marine vessels, the personnel, property, and Cargo they carry on board. (Gurses,2016: 22) referred to the types of marine losses in marine insurance, as they are divided into two main parts, total losses, and partial losses.

## 2.2: Maritime Safety:

Maritime Safety it has been formed under the influence of several contradictory factors according to global economic needs and to the Circumstances of political, economic, and environmental conditions. As a result, it should not be presented as a fixed form of specific content. Based on the maritime transport activity that maintains the provision of diverse requirements for humanity according to the protection of the marine environment. Consequently the concept of maritime safety requires flexibility sometimes in addition to allowing the necessary adjustments in the current principles and methods in accordance with the environmental changes in the maritime transport system (Torskiy, 2015: 14). The organization has taken The International Maritime (IMO) take on here own responsible for the safety of marine vessels, personnel and property they carry on board within the international requirements to maintain maritime safety through the development of international conventions and codes to comply with them (Abdel Moneim, 2000: 10). The concept of maritime safety can be clarified according to the researchers' opinion in

the table below.

**Table (2-3) Concept in maritimes safety**

| No. | Researcher and year | Maritime safety |
|---|---|---|
| 1 | Mohamed,2015:18 | It is the state of "safety" and safety means the control of recognized risks to achieve the level of safety this can take the form of protection from the event or from exposure to something that causes health or economic losses and includes the protection of people or Properties . |
| 2 | Mardan, 2017: 10 | Safety is the opposite of marine risks, so maritime safety means safety, protection, prevention, reassurance, or control of any abnormal act or matter that exposes individuals and marine vessels to a specific danger . |
| 3 | Formela , et al., 2019: 286 | It is the protection of the maritime system represented in (individuals, marine vessels and what they carry on board, and the marine environment) from anything that threatens the safety of maritime navigation . |

Source: Prepared by the researcher based on the aforementioned sources.

### 2.2.1: Safety and Security of Maritime Navigation:

History shows there were a dialectical relationship between the individual and technology which is called the "industrial revolution". The continuous improvement and continuous integration of maritime navigation systems has led to the creation of a new operating environment for marine vessels (Dalaklis, et al., 2020:91). The individual has practiced maritime navigation throughout the ages at certain stages of the development of civilization. So that the human activity spread out widely at sea. The priority in the success of maritime navigation is the safety of navigation and the protection of the marine environment (Hajduk,2009: 23) from marine accidents that can lead to the loss of marine objects and material damage

to maritime infrastructure. The safety is an important issue in maritime navigation and ships in industrial fields (Hwan, et al., 2015:47). After the events of September 11 2001, the issue of maritime security has become an important matter at the global level and is a priority in everything related to the safety and security of maritime transport. The International Maritime Organization has taken many procedures to introduce systems and rules to prevent and combat terrorist acts, piracy attacks and other illegal acts that threaten the safety and security of marine vessels and personnel working in them. The International Maritime Organization has issued an international code for the safety of ships and maritime facilities. ISPS CODE, includes the rules and procedures for ship security and port security and provisions related to local authorities, maritime administrations, and shipping companies. These procedures crystallized in an attempt to prevent acts of piracy and robbery against ships, prevent smuggling, terrorist acts and illegal acts that occur in maritime vessels and threaten the safety of navigation at sea. (Badawi, 2004: 39,16) and (Simanjuntak, et al., 2021:6) agreed in the defines of maritime security as a set of procedures has taken by individuals in maritime vessels in order to protect against terrorism, sabotage, infiltrators, illegal immigrants, political asylum seekers and crimes of piracy and armed robbery to maintain the safety of naval vessels.

### 2.2.2: Maritime Search and Rescue:

Maritime search and rescue is a first-class humanitarian operation, so the International Maritime Organization (IMO) focused on maritime operations and issued relevant conventions, codes, treaties, maritime search, and rescue operations were defined as all the procedures and steps

necessary to rescue individuals, ships and property at sea when exposed to danger during maritime operations (Awad, 2006: 7). Searching is the process of inferring the distressed individuals requesting distress by rescue units.

As for maritime rescue, it means providing aid and assistance to individuals requesting distress as a result of exposure to a specific accident at sea (Al-Qarni, 2012: 345). The researcher (Al-Gemayel, 2013: 44) has added another concept of maritime rescue which is the assistance provided by a ship to another ship in danger or destruction regardless of the nature of the waters in which the rescue operation takes place as mentioned in the Brussels Convention in 1910.

(Damen, 2019: 3) define the rescue is the process of recovering distressed individuals and providing their primary medical or non-medical needs and moving them to a safe place. The rescue agreement held in London in 1989 defined as assistance work is every work or activity exerted to assist a ship or any other money at sea.

**2.3: Management of Vessels Marine:**

Maritime vessel means any ship, boats, or floating facility on the surface of the water and also includes naval military units and military ships (Rizk, 2009: 142). (Ibrahim, 2005: 55) refers to any ship, naval installation, navigable marine instrument and floating vehicle at sea of any kind called maritime vessels. (Kuzman, 2011: 37) defined them as a self-propelled water units dedicated to the transport of goods, liquids and personnel through the seas, oceans, rivers, and lakes, except the war ships. They are ships dedicated to the protection, guarding and maritime navigation. (Algerian & Sari, 2015: 47) showed that the marine vessel include every ship or floating facility

operating in maritime navigation, even if it is not for profit.

### 2.3.1:Maritime Conventions:

At the beginning of the twentieth century the focus was on the unification of maritime rules and laws between countries to coordinate the foundations of maritime navigation and move away from the national character and work with the provisions of the global character to facilitate global trade and maritime transport movement between countries (Al-Anbaki, 2002: 4). These conventions aims to ensure the safe transport and shipment of goods, protect the marine environment from harmful pollutants and protect marine property and individuals (Hodge, 2014:5). The IMO includes 175 member states and three associate members to whom maritime conventions, treaties, and protocols apply. Iraq has complied with the IMO in 1973 in 18 conventions Out of 59 maritime conventions issued by the International Maritime Organization (www.imo.org). Maritime conventions have highlighted the importance of international cooperation in the field of maritime transport for centuries. For long been manifested in maritime traditions such as naval vessels that resort to foreign ports in case of bad weather and go to help others when they are exposed to an accident or problem, regardless of their nationality. The common link between states is maritime agreements (Qaibel, 2005: 28).

### 2.3.2: Marine Classification:-

The emergence of marine classification in the seventeenth century AD, which was associated with: the prosperity of marine insurance. In 1652, the first marine rating body was set up in England to determine: the seaworthiness of ships. The classification at that time depended on: the age of the ship and

the degree of confidence in the place: the construction and the version of Lloyd's: corpses record of the classification known as the Green: Book. In 1799 the Red Book was published: the book of the Lloyd's Marine Classification Authority. Safety of individuals and property and protection of the marine environment: One of the most important objectives of the maritime conventions issued by the International Maritime Organization (IMO) is to maintain basic services on board the ship. There is no legal obligation to classify marine vessels but the insurers' claim: classification is a prerequisite for accepting insurance coverage has prompted owners to: classify marine vessels (Min, 2011:7-9). The marine classification is the linking part between marine safety and marine insurance, by setting a prerequisite for accepting insurance coverage, the existence of a marine classification, and the role of the classification is the presence of marine safety, so the marine classification is a relationship

Correlation between marine insurance and marine safety (Min, 2011:7-9).

## 3. Practical framework: -

### 3.1: Description of research variables: -

**Introduction**: The first independent variable (marine insurance) includes two dimensions (marine hazards, marine losses) where the first dimension dealt with marine risks from( Q1-Q4), while the second dimension dealt with marine losses from (Q5-Q8). The second independent variable (maritime safety) included the other two dimensions (safety and security of maritime navigation, maritime search, and rescue), which is deal with the first dimension (Q9-Q12) and the second dimension

(Q13-Q16). Moreover, it included the dependent variable (marine vessel management) have two dimensions (maritime conventions, and maritime classification). The first dimension was taken from (Q17-Q20) while the second dimension took the maritime classification from (Q20-Q24).

### 3.1.1: Description of the sub-dimensions of the first independent variable (marine insurance):

1. The first dimension: is a marine hazard: for both marine vessels (uninsured and insured).

**Table (3-1) descriptive statistics for the dimensions of the independent variable (marine hazards) for uninsured marine vessels**

| No. | Paragraph | | Totally agree | I agree | Neutral | not agree | Totally disagree | Mean | s.d. | c.v |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | There is an insurance coverage that covers war risks and terrorist operations on marine vessels . | F | | 12 | 54 | 181 | 368 | 1.52 | 0.73 | 48.026 |
| | | % | | 2 | 8.8 | 29.4 | 59.8 | | | |
| 2 | The marine risks covered by the insurance and the excluded | F | | 52 | 295 | 178 | 90 | 2.51 | 0.84 | 33.466 |
| | | % | | 8.5 | 48 | 28.9 | 14.6 | | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **risks are explained to the crew members .** | | | | | | | | | |
| 3 | **There is insurance coverage for marine vessels and shipwrecks in navigational channels** | **F** | | **15** | **33** | **321** | **246** | **1.7** | **0.68** | **40** |
| | | **%** | | **2.4** | **5.4** | **52.2** | **40** | | | |
| 4 | **Insurance coverage is available for all general marine risks that cover the total losses that occur to the marine vessels and what they carry .** | **F** | **7** | **20** | **44** | **212** | **322** | **1.63** | **0.84** | **51.533** |
| | | **%** | **1.1** | **3.3** | **7.2** | **34.5** | **54** | | | |

Source: prepared by the researcher based on the output of ( Excel v.10).

"The answer of the sample members shows that most of the answers tend towards disapproval which is paragraph (2) (The

marine risks covered by insurance and the excluded risks are clarified to the crew members). It gets the first rank in the coefficient of difference being the lowest coefficient of difference between the paragraphs where reached 33%. The paragraph got an arithmetic mean of 2.51 which is neutral, because the marine crews represented in the study sample within the uninsured marine vessel do not have insurance in the first place. As a result, it is difficult to clarify the risks covered and excluded by insurance coverage. The marine risk is the essential element of the existence of marine insurance and the contracting feature of insurance. So (Bouklab, 2018: 26) focused on the need to provide insurance to clarify the marine risks covered and excluded from the policy. Also, this paragraph had a standard deviation of 0.84 which indicated the agreement of the sample members on the answers to this paragraph more homogeneously. As for the rest of the arithmetic mean, the table shows that its value is less than (3) which is lower than the average standard performance (3). As for the standard deviation scale, its value was low in all the tables and did not exceed (0.84) which means that most answers did not deviate from the average by a high amount. The coefficient of variation it did not exceed in all variables (51%) and this indicates that there is great homogeneity in the answers .

**Table (3-2) descriptive statistics for the dimensions of the independent variable (marine hazards) for insured marine vessels**

| No. | Paragraph | | Totally agree | I agree | Neutral | not agree | Totally disagree | mean | s.d. | c.v |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | There is insurance coverage covering the risks of war and terrorist operations on naval vessels. | F | 162 | 96 | 102 | 3 | | 4.15 | 0.9 | 21.686 |
| | | % | 45 | 26.4 | 28.1 | 0.8 | | | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | The marine risks covered by the insurance and the excluded risks are explained to the crew members. | F | 16 | 305 | 35 | 7 | | 3.91 | 0.7 | 17.902 |
| | | % | 4.4 | 84 | 9.6 | 1.9 | | | | |
| 3 | There is insurance coverage for marine vessels and shipwrecks in navigational channels . | F | 169 | 158 | 36 | | | 4.37 | 0.7 | 16.018 |
| | | % | 47 | 43.5 | 9.9 | 3 | | | | |
| 4 | Insurance coverage is available for all general marine risks that cover the total losses that fall on the marine vessels and what they carry | F | 165 | 185 | 13 | | | 4.51 | 0.6 | 13.303 |
| | | % | 46 | 51 | 3.6 | | | | | |

Source: prepared by the researcher based on the output of ( Excel v.10).

As can be seen in the table that most answer of the sample members are heading towards approval and that most of these paragraphs are (4) (Insurance coverage is available for all general marine risks that cover the total losses that fall on the marine vessels and what they carry). It gets the first rank in the coefficient of difference being the lowest coefficient of difference between the paragraphs where it reached 13.30%. The paragraph got an arithmetic mean of (4.51) and this is consistent with the study (Bouklab, 2018: 30) as the insured marine crafts have insurance coverage from marine risks that threaten their safety. Also, this paragraph has a standard deviation of 0.60 which indicated the agreement of the sample members on the answers to this paragraph more homogeneously. The rest of the arithmetic mean, the table shows that its value exceeded the average standard performance (3). As for the standard deviation scale, its value was low in all the tables and did not exceed (0.9). This means that most of the answers did not deviate from the

average by a high amount. The coefficient of variation it did not exceed in all variables (21%) and this indicates that there is great homogeneity in the answers .

## 2- The second dimension: Marine losses: for both marine vessels (uninsured and insured).

**Table (3-3) descriptive statistics of the dimensions of the independent variable (marine losses) for uninsured marine vessels**

| No. | Paragraph | | Totally agree | I agree | neutral | not agree | Totally disagree | mean | s.d. | c.v |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | **Insurance coverage is available that covers the losses of both types (total and judgmental) for insured cargo and marine pieces.** | **F** | | **15** | **107** | **187** | **306** | **1.75** | **0.83** | **47.428** |
| | | **%** | | **2.4** | **17.4** | **30.4** | **49.8** | | | |
| 6 | **The application of the joint loss system is available.** | **F** | | **30** | **236** | **77** | **272** | **2.04** | **1.1** | **53.921** |
| | | **%** | | **4.9** | **38.4** | **12.5** | **44.2** | | | |
| 7 | **Marine vessels resort to non-insurance** | **F** | **48** | **210** | **305** | **32** | **20** | **3.38** | **0.83** | **24.556** |
| | | **%** | **7.8** | **34** | **49.6** | **5.2** | **3.3** | | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **methods to compensate for the loss.** | | | | | | | | | |
| 8 | **Non-compliance of individuals to comply with maritime safety standards will lead to maritime losses.** | **F** | **294** | **176** | **94** | **45** | **6** | **4.14** | **0.99** | **23.913** |
| | | **%** | **48** | **29** | **15.3** | **7.3** | **1** | | | |

Source: prepared by the researcher based on the output of ( Excel v.10).

From the table above the answer of the sample members was scattered and that most of the answers are heading towards approval and disagreement very much. That paragraphs are (8) (Non-compliance of individuals to comply with maritime safety standards will lead to maritime losses). It gets the first rank in the coefficient of difference being the lowest coefficient of difference between the paragraphs where it reached 24%. The paragraph got an arithmetic mean of (4.14) as we note the presence of knowledge by individuals of the necessity of adhering to the maritime safety standards specified by International Maritime Organization (IMO). But marine losses are generated as a result of exposure to several factors that cause accidents, and previous studies have confirmed that more than 85% of accidents are caused by human mistakes (Bouklab, 2018: 186). This paragraph had a standard deviation 1 which indicated that the sample members agreed on the answers to this paragraph

homogeneously. While the rest of the arithmetic mean The table shows that its value is less (3) which is less than the average standard performance (3). As for the standard deviation scale, its value was low in all the tables and did not exceed (1.1), and this means that most of the answers did not deviate from the average by a high amount. For the misalignment coefficient it did not exceed in all variables (54%) and this indicates that there is great homogeneity in the answers.

**Table (3-4) descriptive statistics of dimensions of the independent variable (marine losses) for insured marine vessels**

| No. | Paragraph | | Totally agree | I agree | Neutral | not agree | Totally disagree | mean | s.d. | c.v |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | Insurance coverage is available that covers the losses of both types (total and judgmental) for insured goods and marine pieces. | F | 167 | 176 | 20 | | | 4.41 | 0.6 | 13.605 |
| | | % | 46 | 48.5 | 5.5 | | | | | |
| 6 | The application of the joint loss system is available. | F | 158 | 180 | 25 | | | 4.37 | 0.6 | 13.729 |
| | | % | 44 | 49.6 | 6.9 | | | | | |
| 7 | Marine vessels resort to non-insurance methods to compensate for the loss. | F | 53 | 176 | 134 | | | 3.77 | 0.7 | 18.567 |
| | | % | 15 | 48.5 | 36.9 | | | | | |
| 8 | Non- compliance of individuals to comply with maritime safety standards will result in maritime losses. | F | 297 | 44 | 22 | | | 4.76 | 0.6 | 12.605 |
| | | % | 82 | 12.1 | 6.1 | | | | | |

Source: prepared by the researcher based on the output of ( Excel v.10).

The table above shows that the answer of the sample members was scattered and that most of the answers are heading towards approval and that most of these paragraph are (8) ((Non-compliance of individuals to comply with maritime safety standards will result in maritime losses)). The paragraph has the first rank in the coefficient of difference being the lowest coefficient of difference between the paragraphs where it reached 13%. The paragraph got an arithmetic mean of (4.76) and agreed upon by the sample members with a study (Bouklab, 2018: 190). Also, this paragraph had a standard deviation of 0.6 which indicated that the sample members agreed on the answers to this paragraph more homogeneously. The rest of the arithmetic mean shows that its value exceeded the average standard performance (3). As for the standard deviation scale, its value was low in all the tables and did not exceed (0.7). This means that most of the answers did not deviate from the average by a high amount. As for the coefficient of variation, it did not exceed in all variables (18%). This indicates that there is a great homogeneity in the answers.

### 3.1.2: Description of the sub-dimensions of the second independent variable (maritime safety):

1- The first dimension: the safety and security of maritime navigation: for both marine vessels (uninsured or insured).

**Table (3-5) descriptive statistics for the dimensions of the independent variable (maritime safety and security) For uninsured marine vessels**

| No. | Paragraph | | Totally agree | I agree | Neutral | not agree | Totally disagree | **Mean** | **s.d.** | **c.v** |
|---|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | International maritime agreements are relied upon in developing plans for the safety and security of marine vessels | F | 12 | 43 | 304 | 192 | 64 | 2.58 | 0.84 | 32.558 |
| | | % | 2 | 7 | 49.4 | 31.2 | 10.4 | | | |
| 10 | Providing maritime security helps to achieve the highest possible value of operational and economic efficiency of marine vessels. | F | 71 | 386 | 152 | 6 | | 3.84 | 0.62 | 16.145 |
| | | % | 12 | 62.8 | 24.7 | 1 | | | | |
| 11 | The ECDIS electronic mapping system and the BNWAS navigation watchdog alarm system | F | 19 | 114 | 420 | 62 | | 3.1 | 0.62 | 20 |
| | | % | 3.1 | 18.5 | 68.3 | 10.1 | | | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **are available to ensure the safety and security of maritime navigation.** | | | | | | | | | |
| 12 | **There is a secure communication system between marine vessels and ground stations to ensure the confidentiality of communication against intrusions.** | **F** | **12** | **150** | **247** | **173** | **33** | **2.89** | **0.9** | **31.141** |
| | | **%** | **2** | **24.4** | **40.2** | **28.1** | **5.4** | | | |

Source: prepared by the researcher based on the output of ( Excel v.10).

We notice from the table that the answer of the sample members and that most of the answers are heading towards the neutral and that most of these paragraphs are paragraph (10) ((Providing maritime security helps to achieve the highest possible value of operational and economic efficiency of marine vessels). It gets the first rank in the coefficient of difference being the lowest coefficient of difference between the paragraphs which it reached 16%. The paragraph got an arithmetic mean of (3.84) which is close to approval. The

administration in the General Company for Ports of Iraq and the leadership of Um Qasr Naval Base seeks to raise the operational and economic efficiency of marine vessels by providing security and safety of maritime navigation. The researchers (Morgas & Felski, 2007: 95) pointed out that the management requires the provision of a maritime safety and security system, which is one of its main objectives to ensure the appropriate level of safety and security of marine vessels in all activities that are conducted at sea. Also, this paragraph had a standard deviation of 0.62 which indicated that the sample members agreed on the answers to this paragraph more homogeneously than others. As for the rest of the arithmetic mean, the table shows that its value is close to (3). It is an approach from the average standard performance (3). As for the standard deviation scale, its value was low in all the tables and did not exceed (0.90), and this means that most of the answers did not deviate from the average by a high amount. For the coefficient of variation, it did not exceed in all variables (33%) and this indicates that there is a great homogeneity in the answers.

**Table (3-6) descriptive statistics for the dimensions of the independent variable (maritime safety and security) for insured marine vessels**

| No. | Paragraph | | Totally agree | I agree | neutral | not agree | Totally disagree | Mean | s.d. | c.v |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | **International maritime agreements are relied upon in developing plans for the safety and security of marine vessels** | **F** | **124** | **204** | **35** | | | **4.24** | **0.6** | **14.150** |
| | | **%** | **34** | **56.2** | **9.6** | | | | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 | Providing maritime security helps to achieve the highest possible value of operational and economic efficiency of marine vessels. | F | 249 | 95 | 19 | | | 4.63 | 0.6 | 12.958 |
| | | % | 69 | 26.2 | 5.2 | | | | | |
| 11 | The ECDIS electronic mapping system and the BNWAS navigation watchdog alarm system are available to ensure the safety and security of maritime navigation. | F | 259 | 93 | 11 | | | 4.68 | 0.5 | 10.683 |
| | | % | 71 | 25.6 | 3 | 44 | | | | |
| 12 | There is a secure communication system between marine vessels and ground stations to ensure the confidentiality of communication against intrusions. | F | 93 | 192 | 34 | 12.1 | | 3.92 | 0.9 | 22.959 |
| | | % | 26 | 52.9 | 9.4 | | | | | |

Source: prepared by the researcher based on the output of ( Excel v.10).

We notice from Table (3-6), which shows the answer of the sample members that most of the answers are tend towards the approval and the strong agreement. The most of these paragraphs are paragraph (11) (The ECDIS electronic mapping system and the BNWAS navigation watchdog alarm system are available to ensure the safety and security of maritime navigation). It has the first rank in the coefficient of variation being the lowest coefficient of difference between the paragraphs where it reached 10%. The paragraph got an

arithmetic mean of (4.68) where it tend towards the corresponding because of the requirements Maritime navigation providing an electronic mapping device to maintain the safety of navigation and a navigational alarm device to warn during sailing of various activities that threaten the safety and security of marine vessels and this is confirmed by the researchers (Morgas & Felski, 2007: 98). This paragraph had a standard deviation of 0.5 which indicated the agreement of the sample members on the answers to this paragraph more homogeneously than others. As for the rest of the arithmetic mean, the table shows that its value exceeded the standard average performance (3). As for the standard deviation scale, its value was low in all the tables and did not exceed (0.90). This means that most of the answers did not deviate from the average. As for the coefficient of variation, it did not exceed all variables (23%) which indicates that there is a great homogeneity in the answers.

**2- The second dimension: is marine search and rescue: for both marine vessels (uninsured and insured).**

**Table (3-7) descriptive statistics for the dimensions of the independent variable (marine search and rescue) for uninsured marine vessels**

| No. | Paragraph | | Totally agree | I agree | neutral | not agree | Totally disagree | Mean | s.d. | c.v |
|---|---|---|---|---|---|---|---|---|---|---|
| 13 | **There is an international marine rescue and distress station that assists marine vessels in territorial waters.** | **F** | **6** | **12** | **61** | **312** | **224** | **1.8** | **0.79** | **43.888** |
| | | **%** | **1** | **2** | **9.9** | **50.7** | **36.4** | | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 14 | **Specialized maritime cadres are available for maritime search and rescue operations** | **F** | **7** | **85** | **298** | **198** | **27** | **2.75** | **0.79** | **28.727** |
| | | **%** | **1.1** | **13.8** | **48.5** | **32.2** | **4.4** | | | |
| 15 | **Maritime search and rescue equipment is available IMO-approved.** | **F** | **6** | **6** | **85** | **279** | **239** | **1.79** | **0.78** | **43.575** |
| | | **%** | **1** | **1** | **13.8** | **45.4** | **38.9** | | | |
| 16 | **There is joint coordination with Iraq's coastal neighbors in maritime search and rescue operations under the 1989 Convention (SALVAGE)** | **F** | **6** | **25** | **60** | **268** | **256** | **1.79** | **0.85** | **47.486** |
| | | **%** | **1** | **4.1** | **9.8** | **43.6** | **41.6** | | | |

Source: prepared by the researcher based on the output of ( Excel v.10).

As can be seen in the table that the answer of the sample members and that most of the answers are heading towards disagree. The most of these paragraphs are paragraph (14) (Specialized maritime cadres are available for maritime search and rescue operations) . It has the first rank in the coefficient of difference being the lowest coefficient of difference between the paragraphs where it reached 29%. The paragraph got an arithmetic mean of (2.75) which is close to the neutral because

the naval cadres did not receive the necessary training and support by specialized rehabilitation centers in the field of Maritime search and rescue according to the standards of the International Maritime Organization (IMO) (Awad, 2006: 6). This paragraph had a standard deviation of 0.79 which indicated the agreement of the sample members on the answers of this paragraph in a homogeneous manner more than others. The rest of the arithmetic mean, the table shows that its value is approaching (2) which is less than the average standard performance (3) and an indication that these paragraphs are not applied. The study of (Awad, 2006: 8) on all marine vessels confirmed training and qualification of individuals Search and rescue operations as well as the provision of international rescue and distress stations in coastal ports to provide support to distressed naval vessels.

**Table (3-8) descriptive statistics for the dimensions of the independent variable (marine search and rescue) for insured marine vessels**

| No. | Paragraph | | Totally agree | I agree | neutral | not agree | Totally disagree | Mean | s.d. | c.v |
|---|---|---|---|---|---|---|---|---|---|---|
| 13 | **There is an international marine rescue and distress station that assists marine vessels in territorial waters.** | **F** | **89** | **202** | **72** | | | **4.05** | **0.7** | **17.283** |
| | | **%** | **25** | **55.6** | **19.8** | | | | | |
| 14 | **Specialized maritime cadres are available for** | **F** | **215** | **123** | **25** | | | **4.52** | **0.6** | **13.274** |
| | | **%** | **59** | **33.9** | **6.9** | | | | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **maritime search and rescue operations** | | | | | | | | | |
| 15 | **Maritime search and rescue equipment is available IMO-approved.** | **F** | **303** | **43** | **17** | | | **4.78** | **0.5** | **10.460** |
| | | **%** | **84** | **11.8** | **4.7** | | | | | |
| 16 | **There is joint coordination with Iraq's coastal neighbors in maritime search and rescue operations under the 1989 Convention (SALVAGE)** | **F** | **107** | **178** | **78** | | | **4.07** | **0.7** | **17.199** |
| | | **%** | **30** | **49** | **21.5** | | | | | |

Source: prepared by the researcher based on the output of ( Excel v.10).

We notice from the table that the answer of the sample members and that most of the answers are heading towards the approved and strongly agreed. The most of these paragraphs are paragraph (15) (Maritime search and rescue equipment is available IMO-approved). It has the first rank in the coefficient of difference being the lowest coefficient of difference between the paragraphs where it reached 10%. The paragraph got an arithmetic mean of (4.78) and this is a high indicator of the integration of marine search and rescue equipment in the insured marine vessel and the approved by the International Maritime Organization, because it operates outside the territorial

waters. They are roving ships to transport goods and are not allowed to enter the global ports as they do not have integrated safety equipment, including rescue search equipment and this is confirmed by (Awad, 2006: 15). This paragraph had a standard deviation of 0.5 which indicated the agreement of the sample members on the answers to this paragraph in a homogeneous manner more than others. As for the rest of the arithmetic mean, the table shows that its value exceeded the standard average performance (3). As for the standard deviation scale, its value was low in all the tables and did not exceed (0.7) and this means that most of the answers did not deviate from the average by a high amount. Whereas for the coefficient of variation, it did not exceed in all variables (17%) and this indicates that there is great homogeneity in the answers.

### 3.1.3: Description of the sub-dimensions of the dependent variable (Management of marine vessel):-

### 1- The first dimension: Maritime agreements: For both marine vessels (uninsured and insured).

**Table (3-9) Descriptive statistics of the dimensions of the dependent variable (maritime agreements) for uninsured marine vessels**

| t | Paragraph | | Totally agree | I agree | Neutral | not agree | Totally disagree | mean | s.d. | c.v |
|---|---|---|---|---|---|---|---|---|---|---|
| 17 | **The International Convention for the Prevention of Pollution from Marine Objects (Marpol) and its amendments are implemented** | **F** | | **23** | **86** | **418** | **88** | **2.07** | **0.65** | **31.400** |
| | | **%** | | **3.7** | **14** | **68** | **14.3** | | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 18 | There is an application of the 2007 Nairobi Convention on the Removal of Shipwrecks from Ports and Navigational Canals. | F | | 6 | 104 | 412 | 93 | 2.04 | 0.59 | 28.921 |
| | | % | | 1 | 16.9 | 67 | 15.1 | | | |
| 19 | The Convention on the Safety of Life at Sea is applied jointly with neighboring coastal countries when a shipwreck occurs at sea. | F | | 86 | 313 | 144 | 72 | 2.76 | 0.86 | 31.159 |
| | | % | | 14 | 50.9 | 23.4 | 11.7 | | | |
| 20 | Maritime objects are subject to the application of the International Convention for the Prevention of Collisions at Sea (Colreg). | F | | 53 | 478 | 50 | 34 | 2.89 | 0.61 | 21.107 |
| | | % | | 8.6 | 77.7 | 8.1 | 5.5 | | | |

Source: prepared by the researcher based on the output of ( Excel v.10).

As illustrated in the table the answer of the sample members and that most of the answers are tend towards neutral. In addition, the most of these paragraphs is paragraph (20) (Maritime objects are subject to the application of the International Convention for the Prevention of Collisions at Sea (Colreg)). It has the first rank in the coefficient of difference being the lowest coefficient of difference between the paragraphs where it reached 21%. The paragraph got an arithmetic mean of (2.89) which relatively approval. This approval due to that all marine vessels are subject to the application of conventions to prevent collisions at sea. It is worth noting the interest in the application of international conventions to avoid accidents, collisions and navigational hazards (Mihneva, 2005: 6). This paragraph had a standard

deviation of 0.6 that indicate the agreement of the sample members on the answers to this paragraph homogeneously. The rest of the arithmetic mean, the table shows that its value is approaching the average standard performance (3). As for the standard deviation scale, its value was low in all the table and did not exceed (0.86). This means that most of the answers did not deviate from the average by a high amount. For the coefficient of variation, it did not exceed in all variables (31%).

**Table (3-10) descriptive statistics of the dimensions of the dependent variable (maritime agreements) for insured marine vessels**

| t | Paragraph | | Totally agree | I agree | neutral | not agree | Totally disagree | mean | s.d. | c.v |
|---|---|---|---|---|---|---|---|---|---|---|
| 17 | **The International Convention for the Prevention of Pollution from Marine Objects (Marpol) and its amendments are implemented** | F | 166 | 168 | 11 | | | 4.43 | 0.6 | 13.544 |
| | | % | 46 | 51.2 | 3 | | | | | |
| 18 | **There is an application of the 2007 Nairobi Convention on the Removal of Shipwrecks from Ports and Navigational Canals.** | F | 25 | 120 | 214 | 4 | | 3.5 | 0.6 | 17.142 |
| | | % | 6.9 | 33.1 | 59 | 1.1 | | | | |
| 19 | **The Convention on the Safety of Life at Sea is applied jointly with neighboring coastal countries when a shipwreck occurs at sea.** | F | 319 | 30 | 14 | | | 4.84 | 0.5 | 10.330 |
| | | % | 88 | 8.3 | 3.9 | | | | | |
| 20 | **Maritime objects are subject to the** | F | 315 | 31 | 17 | | | 4.82 | 0.5 | 10.373 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | application of the International Convention for the Prevention of Collisions at Sea (Colreg). | % | 87 | 8.5 | 4.7 | | | | | |

Source: prepared by the researcher based on the output of ( Excel v.10).

According to the table above that shows the answer of the sample members. The most of the answers are heading towards approval and strongly agree where the most of these paragraphs are paragraph (19) (The Convention on the Safety of Life at Sea is applied jointly with neighboring coastal countries when a shipwreck occurs at sea). It gets the first rank in the coefficient of difference being the lowest coefficient of difference between the paragraphs which is reached 10%. The paragraph got an arithmetic mean of (4.84). This paragraph indicates the human aspect in dealing. It refers to the rescue of drowned at sea or the provision of assistance to the marine vessels requesting distress in accordance with the agreement SOLAS which it agreed with the study (Mihneva, 2005: 36). Furthermore, this paragraph had a standard deviation of 0.5 which indicated the agreement of the sample members on the answers to this paragraph more homogeneously. As for the rest of the arithmetic mean shows that its value exceeded the average standard performance (3). The standard deviation scale, its value was low in all the tables and did not exceed (0.6) where this means that most of the answers did not deviate from the average by a high amount. Also, the coefficient of variation, it did not exceed in all variables (17.14%).

## 2- The second dimension: is marine classification: for both marine vessels (uninsured, insured).

Table (3-11) descriptive statistics of the dimensions of the dependent variable (marine classification) for uninsured marine vessels

| t | Paragraph | | Totally agree | I agree | Neutral | not agree | Totally disagree | mean | s.d. | c.v |
|---|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 21 | There is a maritime classification of all Iraqi naval vessels by one of the international classification bodies. | F | | 17 | 45 | 478 | 75 | 2.01 | 0.55 | 27.363 |
| | | % | | 2.8 | 7.3 | 77.7 | 12.2 | | | |
| 22 | Uninsured naval vessels possess a maritime classification recognized by the International Maritime Organization. | F | | | 85 | 365 | 165 | 1.87 | 0.63 | 33.689 |
| | | % | | | 13.8 | 59.3 | 26.8 | | | |
| 23 | Iraq has local classification bodies that support marine vessels. | F | | | 54 | 77 | 484 | 1.31 | 0.62 | 47.328 |
| | | % | | | 8.8 | 12.5 | 78.7 | | | |
| 24 | Maritime classification plays an active role in the operation of Iraqi naval vessels in international ports. | F | 291 | 23 | 90 | 7 | 4 | 4.28 | 0.8 | 18.691 |
| | | % | 47 | 36 | 14.6 | 1.1 | 0.7 | | | |

Source: prepared by the researcher based on the output of ( Excel v.10).

As can be seen in the table that shows the answer of the sample members. The most of the answers tend towards disapproval and that most of these paragraphs is paragraph (24) (Maritime

classification plays an active role in the operation of Iraqi naval vessels in international ports). where it's get the first rank in the coefficient of difference being the lowest coefficient of difference between the paragraphs. It reached 19% where the paragraph got an arithmetic mean of (4.28) and this due to the maritime classification. It applies all the standards and regulations of the organization International Maritime. When the classification is exist in the naval vessels its indicate their efficiency and the extent of their application of the rules and conventions related to the International Maritime Organization (Knapp, 2004: 15). Moreover, this paragraph had a standard deviation of 0.8 which indicated the agreement of the sample members on the answers to this paragraph more homogeneously. The rest of the arithmetic mean, the table shows that its value is less than the average standard performance (3). As for the standard deviation scale, its value was low in all the tables and did not exceed (0.8). This means that most of the answers did not deviate from the average by a high amount. The coefficient of variation, it did not exceed in all variables (47 ).

**Table (3-12) descriptive statistics of the dimensions of the dependent variable (marine classification) for insured marine vessels**

| t | Paragraph | | Totally agree | I agree | Neutral | not agree | Totally disagree | mean | s.d. | c.v |
|---|---|---|---|---|---|---|---|---|---|---|
| 21 | **There is a maritime classification of all Iraqi naval vessels by one of the** | **F** | **26** | **230** | **107** | | | **3.77** | **0.6** | **15.915** |
| | | **%** | **7.2** | **63.4** | **29.5** | | | | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **international classification bodies** | | | | | | | | | |
| 22 | **Uninsured naval vessels possess a maritime classification recognized by the International Maritime Organization** | **F** | **21** | **206** | **132** | **4** | | **3.67** | **0.6** | **16.348** |
| | | **%** | **5.8** | **56.7** | **36.4** | **1.1** | | | | |
| 23 | **Iraq has local classification bodies that support marine vessels.** | **F** | **21** | **222** | **116** | **4** | | **3.72** | **0.6** | **16.129** |
| | | **%** | **5.8** | **61.2** | **32** | **1.1** | | | | |
| 24 | **Maritime classification plays an active role in the operation of Iraqi naval vessels in international** | **F** | **226** | **95** | **42** | | | **4.51** | **0.7** | **15.521** |
| | | **%** | **62** | **26.2** | **11.6** | | | | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **ports.** | | | | | | | | | |

Source: prepared by the researcher based on the output of ( Excel v.10).

From the table above it shows the answer of the sample members. Where the most of the answers are heading towards approval and that most of these paragraphs are paragraph (24) (Maritime classification plays an active role in the operation of Iraqi naval vessels in international ports). It gets the first rank in the coefficient of difference being the lowest coefficient of difference between the paragraphs where it reached 15%. This paragraph got an arithmetic mean of (4.51) which is an indicator that the insured marine vessel have a maritime classification and its members are aware of its importance in Operation and development of the level of efficiency of marine vessels where agreed with (Knapp, 2004: 25). Also, the paragraph had a standard deviation of 0.7 which indicated the agreement of the sample members on the answers of this paragraph more homogeneously. For the rest of the arithmetic mean The table shows that its value exceeded the average standard performance (3). As for the standard deviation scale, its value was low in all the tables and did not exceed (0.7). It means that most of the answers did not deviate from the average by a high amount. The coefficient of variation, it did not exceed in all variables (16%) and it indicates that there is a great homogeneity in the answers.

## 3.2: Normal distribution test: -

A test had been conducted (Kolmogorov-Smirnov) for the normal distribution of the two independent variables (marine insurance and maritime safety), as well as the normal

distribution of the dependent variable (management of marine vessel). It has been shown that all the dimensions of the independent variables and the dimensions of the variable belonging to the marine vessel (insured and uninsured) got the value of (sig) is higher than the value of the level of significance (0.05). This means accepting the hypotheses that state that the data are distributed normally.

### 3.3:Testing research hypotheses: -

The main existence hypothesis $H_{11}$: There is a significant impact relationship between the two variables Marine Insurance and Maritime Safety on the management of marine vessels.

The main Null hypothesis $H_{01}$: There is no significant impact relationship between the two variables Marine Insurance and Maritime Safety on Marine vessel Management.

### 3.4: Analysis of the impact relationship of the marine insurance variable and the maritime safety variable on the management of marine vessels: -

In order to reach the realization of the hypothesis of the study, the effect of the two variables (maritime safety and marine insurance) combined on (marine vessel management) is based on multiple regression analysis. The average of the maritime safety was taken in all its dimensions for both marine vessels (insured and non-insured). Also, the rate marine insurance has been taken for both marine pieces as well and conducting a test (F) and a test( T) to determine the significance of the regression equation (effect) and from the application of the hypothesis must be ensured that the model does not suffer from standard problems which is:

There is no correlation between independent variables or there is a correlation between two or more variables, but not a strong relationship. When this condition is not applicable, it means that

the model suffers from multi-linearity. This is confirmed by calculating the variance inflation coefficient VIF If according to statistical tests. If the value of VIF is greater than 3, this indicates the possibility that the model suffers from the problem of multi-linearity and to ascertain whether the multiple regression model of the study suffers from Multi-linear problem The multilinear test between the variables and the table below was performed between the results of the multilinear test through the values of VIF (Variance Inflation Coefficient) as well as the Tolerance Test.

**Table (3-16) indices of variance inflation and the grace period for the multicollinearity test between the independent variables**

| Model | Insured marine vessels | | Uninsured marine vessels | |
|---|---|---|---|---|
| | VIF | Tolerance | VIF | Tolerance |
| **Maritime safety** | 0.988 | 1.012 | 1.157 | 0.864 |
| **Marine insurance** | 0.674 | 1.484 | 1.019 | 0.981 |

Source: prepared by the researcher based on the outputs of the program (spss.v.23).

From the results of the test that all models had a VIF value less than 3 and this indicates that the model does not suffer from the problem of multi-linearity. Either the values of (tolerance coefficient) express the amount of tolerance for the presence of multiple correlations and this value expresses the inverse of the correlation coefficient and must not be less than 0.1 and otherwise the model suffers from multi-linearity.

**Table (3-17) The results of the regression analysis of the two variables of marine insurance and marine safety on the variable of marine craft management**

| the independ | Insured marine vessels | Uninsured marine vessels |
|---|---|---|

| ent variable | (Sig) | F | $R^2$ | (Sig) | T | regression coefficient | (Sig) | F | $R^2$ | Si (g) | T | regression coefficient |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| fixed limit | 0.000 | 279 | 0.76 | 0.01 | 2.78 | 0.35 | 0.000 | 279 | 0.37 | 0.000 | 9.18 | 1.41 |
| Maritime safety | | | | 0.000 | 10.4 | 0.46 | | | | 0.000 | 5.16 | 0.36 |
| Marine insurance | | | | 0.000 | 12.9 | 0.45 | | | | 0.000 | 4.13 | 0.22 |

Source: Prepared by the researcher based on the outputs of the program (spss.v.23).

**From the above table, it is clear that:**

**Table (3-18) Comparing the results of the regression analysis of the effective relationship between the two variables marine insurance and marine safety on the dependent variable marine craft management**

| Insured marine vessels | Uninsured marine vessels |
|---|---|
| It is clear from Table (3-17) that the maritime safety parameter reached (0.46), which is statistically significant, from comparing the value of (sig=0.000) with the level of morality, while the marine insurance parameter reached (0.45) and this value is statistically significant by comparing (sig=0.000) with the level of morality, and this means when the percentage of maritime safety is increased by (46%) and the percentage of marine insurance application is (45%). This will lead to raising the level of efficiency of marine crafts management. The value of the coefficient of determination $R^2$ This value reached (76%) and indicates the importance of the variable of maritime safety and maritime insurance in the management of insured marine vessels . | It is clear from Table (3-17) that the maritime safety parameter reached (0.36), which is statistically significant, from comparing the value of (sig=0.000) with the level of morality, while the marine insurance parameter reached (0.22). This value is statistically significant by comparing (sig=0.000) with the level of morality. This means when the percentage of maritime safety is increased by (36%) and the percentage of the marine insurance application is (22%). This will lead to raising the level of efficiency of marine crafts management. The value of the coefficient of determination $R^2$ reached ( 37%) This value indicates the importance |

| | |
|---|---|
| | of the variable of maritime safety and marine insurance in the management of uninsured marine vessels . |

**Conclusion :-**

**First:** The noticeable change in the value of the parameter (maritime safety and marine insurance) explains the response of the sample members to both insured and uninsured marine vessel, and this indicates the availability of marine safety and insurance requirements in the insured marine vessel by a positive percentage, unlike the uninsured marine crafts.

**Second:** The relative importance of the variable of maritime safety and maritime insurance in insured marine vessels is of relatively great value in explaining the variations in the management of marine vessels, while we note that the relative importance in uninsured marine vessels is relatively few.

**Third:** The results show the acceptance of the main hypothesis $H_{11}$ which indicates a statistically significant effect between maritime safety and maritime insurance combined on the management of marine crafts and in both insured and uninsured marine vessels.

Source: prepared by the researcher.

## 4.1:Conclusions: -

1 - The results of the current research reached the acceptance of the relationship of influence between the first variable marine insurance and the second variable maritime safety with the variable of marine vessels management.

2- The results of the research found that there is a maritime classification in the Iraqi naval vessel that are insured, unlike the Iraqi naval vessel that are not insured and do not have a maritime classification.

3- In the statistical aspect of the insured marine pieces, the value of the coefficient of determination $R^2$ is 76%. This value indicates the importance of the variable of maritime safety and maritime insurance in the management of insured marine ships,

while the complementary percentage is due to other variables. As for the uninsured marine vessel, the coefficient of determination $R^2$ reached (37%) and this value indicates the importance of the variable of maritime safety and maritime insurance in the management of uninsured marine vessel.

4- Emphasis on marine insurance and the orientation of marine institutions towards insurance companies to protect individuals and marine ships.

5- Enhancing maritime safety requirements in marine vessels (insured and uninsured) and making them compatible with the global requirements of the International Maritime Organization (IMO).

### 4.2: Recommendations: -

1- The research recommends emphasizing the role of maritime safety in a way that suits the requirements of the International Maritime Organization.

2- Activating marine insurance in uninsured marine vessels to promote a better practical reality.

3- The necessity of a maritime classification in unsecured marine ships.

4- Enhancing the culture of maritime safety among marine crews in marine vessels (insured and uninsured).

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