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The American University in Cairo

School of Sciences and Engineering

**PROPOSED FORCE MAJEURE CLAUSE FOR CONSTRUCTION
CONTRACTS UNDER PREVAILING LAWS**

A Thesis submitted to the

Construction Department

In partial fulfillment of the requirements for

The degree of Masters of Science

By

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Under the supervision of

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December 2017

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ABSTRACT

Force majeure is one of the most critical risks that affects the obligations of the contract parties in the construction industry. The concept of force majeure, basically, is a civil law concept that is found in the civil codes of most civil law jurisdictions, while common law does not recognize such concept with the same wide definition and application. Occurrence of a Force majeure event can dramatically affect the execution of the contract as it hinders a party of the contract, or both parties, from fulfilling its/their obligations for a reason beyond its/their control and expectation. Thus it is vital to have a well drafted force majeure clause in construction contracts to give an excuse to the affected party from further performance of its obligations under the contract until the expiration of the event or, sometimes, to give a right to terminate the contract.

The aim of this research is to propose a force majeure clause applicable to all kinds of construction contracts either governed by a civil law or a common law jurisdiction. To achieve that aim, a questionnaire survey is conducted to explore the opinions and past experience of a selected professional group consisting of twenty five professionals working in the construction field with contract administration background. Based on the finding of literature review, the survey findings, and on a number of contracts the researcher dealt with during his professional life a model clause is developed. The model clause is then verified by obtaining the opinions of three experts in contracts administration. It is also compared with four mega project contracts in several countries. The results of the comparison indicates that the model clause is comprehensive and can be applied to construction contracts to achieve its intended purpose.

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CHAPTER 1 : INTRODUCTION

1 . 1 Force Majeure Concept

Construction industry faces a lot of inherent uncertainties and issues like market price fluctuations, competitive bidding process, adverse weather changes, productivity on site, government actions and decisions, political situations, inflation, parties' contractual rights, market competition, etc. Thus the construction industry suffers a lot of risk more than the majority of other industries (Azari & Mousavi, 2011). One of the most important sources of risk and contingency which contract parties should measure is the risks of force majeure.

Typically, there are two main types of legal systems worldwide, with most countries adopting the characteristics of any of them into their own legal system, Civil Law and Common law. Also there are standard contracts and tailored contracts in construction industry. Every Contract should contain a provision addressing the force majeure concept in several aspects; causes, consequences and the steps that might be taken by the contract parties when they face one of the force majeure events.

The term "Force Majeure" arose from the French law which was called Code Napoleon and now the Code Civil. Such law provides that if the debtor is prevented from performing his obligations as a result of force majeure, then there is no place for any damages. However, the term "Force Majeure" has not been recognized as having a precise meaning under the traditional English law.

Standard forms of contracts refer to the force majeure principle in different ways. Although the force majeure clause is commonly included in the contracts in construction field, it is amazing how differently it is dealt with in the standard forms whether in respect to the definition of the concept itself or the consequences of it and the excuse afforded to the contract parties. Therefore, the provisions of force majeure

in the standard forms should be clear and their impact should be fully understood before parties enter into the contract. Likewise, when the parties of the contract draft tailored clauses, they should give much attention to address certain essential drafting points. In all cases, the contract parties must make sure that the definition of force majeure is comprehensive and suitable for the particulars of the project at hand and that the relief granted to the affected party will be adequate in all circumstances. A failure to account for such issues in the contract might result in an affected party being solely reliant on the limited relief provided under the applicable law of the contract.

1 . 2 Importance of Drafting a Force Majeure Clause in Contracts

A Force Majeure clause is a contract provision that gives a party an entitlement to stop performing its contractual obligations under the contract by the way of suspension or termination if certain circumstances beyond its control occur so that the performance becomes impossible, inadvisable, illegal or commercially impracticable (Corrada & M, 2007). The provision may provide a temporary suspension of the contract or in, some cases, termination if the force majeure event persists for a certain period of time.

Without clear provisions that effectively and clearly prescribe the parties' rights and obligations, contracting parties will be at the mercy of the law, specially the rigid common law doctrines of impossibility and frustration of contracts in addition to the inflexibility of the Law Reform. Properly and adequately drafted force majeure clauses should provide a sophisticated criteria for dealing with the different consequences of the events and stating a range of remedies that the parties will be entitled to. However, in many cases, the force majeure clauses are neither drafted adequately or properly throughout standard and tailor made forms of contracts.

Poorly drafting of force majeure clause is a source of disputes regarding whether the event is a force majeure, the obligation of the contract parties upon occurrence the event or the consequences of the events. In his study about the causes of disputes in construction projects in Continental Europe, Allen (2015) mentioned the top five causes of disputes in 2014 comparing with 2013. As demonstrated in table 1 below, force majeure was the fourth in the ranking during 2014 and the second during 2013. This result supports the great importance of incorporating a well drafted force majeure clause in construction contracts (Allen, 2015).

Table 1: *Causes of disputes in Continental Europe in 2014 compared with 2013*

2014 Rank	Cause	2013
1	Omissions and errors in the contract documents	-
2	Poor contract administration	5
3	Failure to issue fair assessment for time claims	-
4	Force majeure events	2
5	Lack of clarity in client's requirements	-

1 . 3 Critical Assessment of Recently Executed Contracts

Force majeure clauses in four contracts for mega projects in four different countries are studied. In addition, a case study for currently executed project in Egypt is demonstrated. The purpose of such study and demonstration is to illustrate that a lot contracts do not address the issue of force majeure in an optimum way in order to avoid disputes and uncertainties and to proof the importance of drafting an integral force majeure clause in construction contracts.

1 . 3 . 1 Force Majeure Clauses in Four Mega Projects' Contracts

Force majeure clauses in four contracts for mega construction projects in four different countries are studied. It is noted that none of the four clauses covers all aspects of force majeure in an integral way.

For instance, one of the contracts defines that force majeure as Causes beyond either Party's reasonable control, while it does not mention that the force majeure is an exceptional, not foreseen circumstance that adversely affects ability of the contract party to perform its obligations. Moreover, it does not properly provide the consequences of the force majeure events. Another contract ignores a lot of events that should be considered as force majeure. Another one does not mention the entitlement of the affected party for cost compensation if additional work is done to avoid the effects of force majeure. The fourth contract does not precisely match with the civil law provisions in the concept of force majeure. A detailed study of the four contracts is mentioned in Chapter 5 of this research.

1.3.2 A Concise Case Study for a Construction Contract having a Poorly

Drafted Force Majeure Clause

A comprehensive force majeure clause clearly sets forth the rights and obligations of the contract parties, addresses all events that might occur, contains no ambiguities, conflicts or inconsistencies, and employs plain language so non-lawyers can easily understand it. In short, a good force majeure clause reduces the risk of misunderstandings and costly litigation. A carefully drafted clause also means reduction of disputes of contract parties.

In one of recently executed projects that was carried out in Upper Egypt, the employer and the contractor have signed an ad-hoc contract in which a force majeure clause was very brief. During the execution of the project, a large segment of the main access road leading to the project collapsed. As a mitigation action, in order to avoid prolonged delay of the project, the contractor used a secondary road that was rough and much longer than the main road to bring his supplies. The contractor claimed his entitlement to the incurred cost and time as he did not take into account using the rough

road while pricing the project. However, the employer rejected the claim as the force majeure clause in their contract states that in case of force majeure, the contractor shall use its best efforts to remedy the situation to the extent possible, without mentioning that the contractor will be compensated for such efforts which were unforeseen at the time of signing the contract. Moreover the employer did not grant the contractor a time extension because such extension was not stated as one of the consequences of force majeure events. The parties raised the dispute to the arbitration which is still going on. It can be concluded from the case study, that bad drafting of the force majeure clause in construction contracts leads to debates in the interpretation of the context thus the affected party will most probably fail to obtain his rights.

1 . 4 Problem Statement

Force majeure clauses can grant an excuse for contract parties unable to fulfill their obligations because of events out of their expectations and control. Parties affected by force majeure events must review their contracts to know what the applied rules are in such particular cases. Force majeure clauses often require counterparty notification at the beginning of force majeure events and upon their expiration. Furthermore, sometimes contracts are terminable if force majeure events cause impossibility of performance or if the events last for a certain period. It is vital for the parties that are experiencing force majeure events to find out what their contracts actually say.

Even if a force majeure clause describes the types of incidents that are covered by the clause in a properly and effectively way, problems could still arise if the clause is not completely clear without any doubts. If, for example, a contractor is laying a building's foundation and an earthquake occurs, and such earthquake is considered one of the force majeure events according to the clause, what is the course of action for the contractor to take? And what happens to his contract? Will it be terminated, or will the

contractor be able to continue performing work? If additional work is needed, how much compensation is due to the contractor? These are all questions that must be asked and answered by the clause provisions.

Furthermore, although the contractor and the Employer may have come to an agreement on what a "force majeure" is, a court, generally, will not consider the agreement as it will look for the evidence in the provisions of the contract itself.

Thus, despite the existing of an agreement between contract parties about the interpretation of the force majeure clause, the employer and the contractor have to include their agreement as a provision in their contract at the beginning of the project. Failure to do so, the contractor shall bear the full liability for time delays and extra costs that it believes were caused by a force majeure.

Therefore, the presence of a force majeure clause is imperative in construction contracts to avoid uncertainties and disputes. The absence of such clause as well as its insufficiency, ambiguity or lack in clarity, which is the case in most of contracts, might deprive the affected party of claiming damages that would have been due to him if the clause was existing or was drafted in a clear and comprehensive manner including all aspects of force majeure.

This thesis provides a way to formulate the force majeure clause to assist drafters in tailoring the clause to their agreements whether such agreements are governed by Civil Law or Common Law and whether the agreements are tailor-made or under the general condition of international standard contracts.

1 . 5 Thesis Objective

Despite the need for a carefully drafted force majeure clause, the full perception of such clause is not known, as it should be, to many contract drafters because most international long-term contracts are confidential, in addition, most arbitral decisions

involving force majeure issues are not generally published. The goal of this research is to provide specific rules for drafting an adequate force majeure clause in various legal systems.

In order to achieve this thesis goal, the research objective is to develop a model force majeure clause that suits both legal systems, civil law and common law. Such model ensures that all the components of the force majeure clause are fulfilled and are matching with all types of construction contracts.

1 . 6 Methodology

The most adequate and proper research methodology in such topics consists of the following steps which are demonstrated in the figure below (Ke, Wang, Chan, & Cheung, 2009).

1- Topic Identification

2- Data Collection

3- Data Analysis and Processing

4- Model Verification & Validation

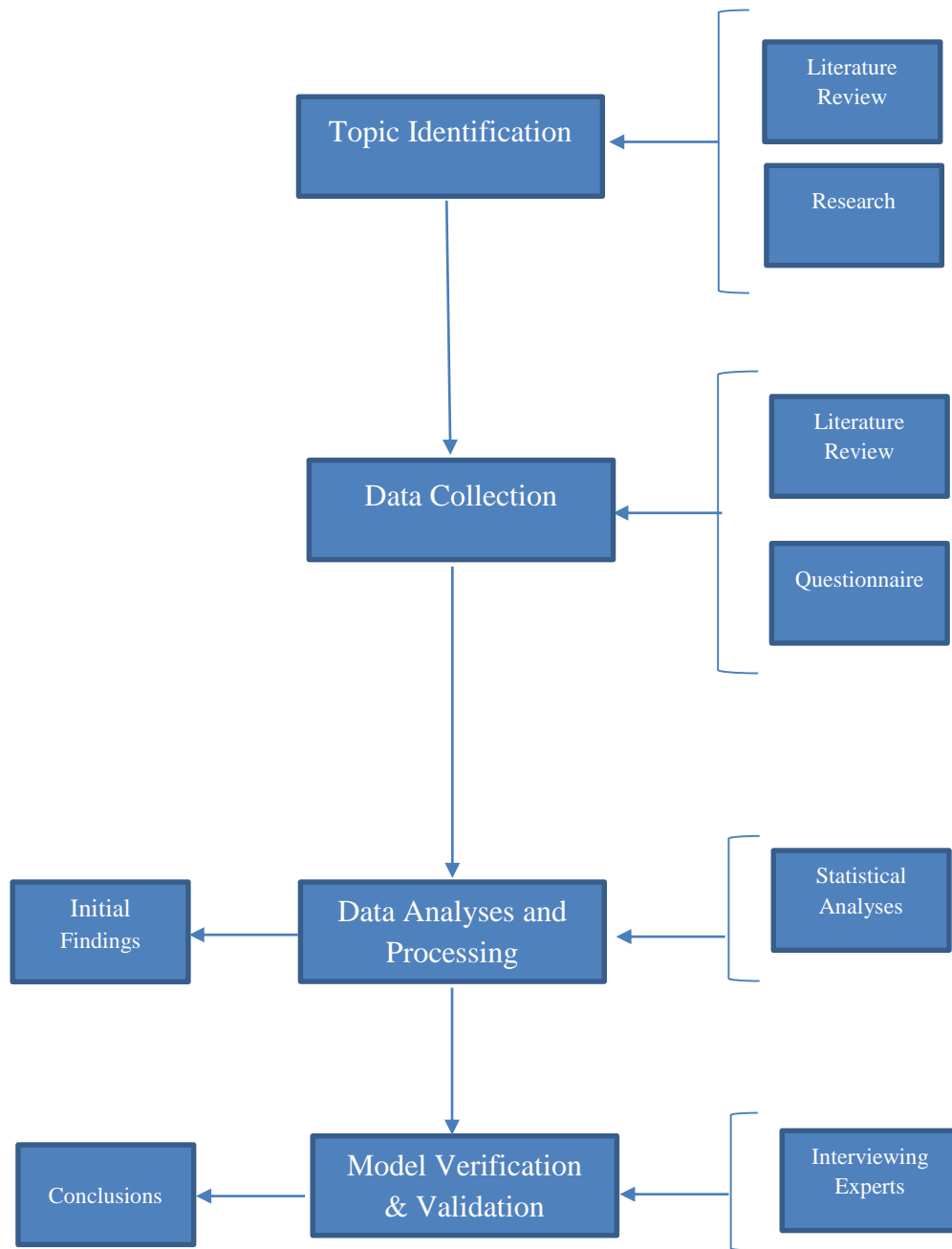


Figure 1: Research Methodology (Ke *et al*, 2009)

1.6.1 Topic Identification

Topic Identification is performed through a comprehensive Literature Review from scientific sources like journals, articles, conference papers, books, reports, etc. (Ke *et al*, 2009). In addition, experts have been interviewed and discussed in order to know the proper context of force majeure clause in different legal systems and according to the governing law of the contract.

1.6.2 Data Collection

A questionnaire is developed to investigate the participants' perspective of the force majeure concept and its elements as obtained from various sources in the literature review. The goal of the questionnaire is to find out the identification and assessment of each provision of the force majeure clause by each respondent. Clear identification of the overarching aims of the survey constitutes the first step in developing such survey, then it should be ensured that these aims are linked to the evaluation objectives. Once these have been achieved, the questionnaire maker can then move to the next step which is developing groups of well-defined questions likely to extract the types of information that he is interested in exploring them. It is so useful, while developing the questionnaire, to keep the aim of the survey to the fore (Boynton & Greenhalgh, 2004).

Figure 2 below shows the main steps for developing an adequate questionnaire.

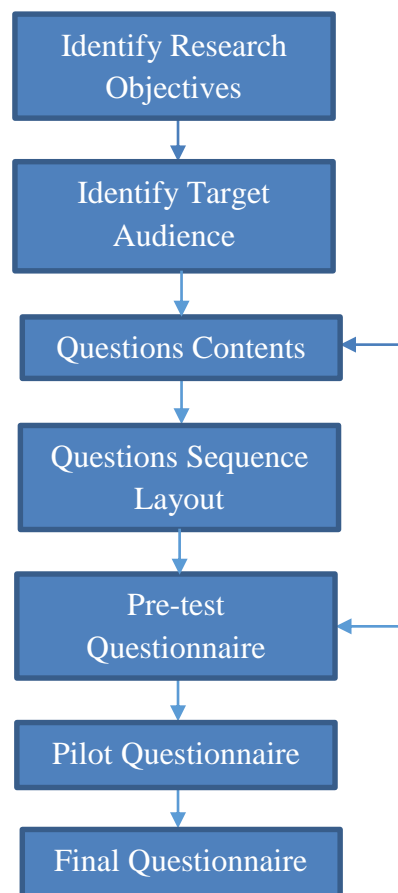


Figure 2: Main Steps to Develop a Questionnaire (Kasunic, 2005)

The respondent are asked to determine, based on his/her own experience, the definition of the concept of force majeure, the events that are considered as force majeure events, the liability of contract parties upon occurrence of such events and the consequences of force majeure. The respondents are supposed to distinguish between the concept of force majeure and other concepts treating the unexpected events in civil law legal system. Furthermore, they are expected to recognize the force majeure alternative doctrines in common law legal system. The respondents can belong to any of the construction industry parties: client, contractor or consultant. All the respondents have a considerable knowledge in contract administration.

1 . 6 . 3 Data Analysis and Processing

The data gathered from the survey is statistically analyzed then a model force majeure clause is developed according to the questionnaire's outcomes and literature review. Each element of the clause is drafted accurately so as to cover the application of force majeure and to provide the adequate protection of contract parties upon occurrence of an event that hinder any of them from performing its obligations. The Model's objective is to formulate a clause that can be included in construction contracts regardless the applicable law of the contract and whether the contract shall be performed in a civil law or a common law country.

1 . 6 . 4 Model Verification & Validation

The verification of the model is conducted by interviewing a number of experts and presenting the model to them in order to obtain their opinions about the completeness and comprehensiveness of the model clause and to ensure its integrity.

In addition, the model is compared with the force majeure clause in four actual ongoing construction contracts to ensure the wide range applicability of the model on construction contracts of different types and different jurisdictions.

The model clause has not been validated as such validation requires incorporating it into future contracts and getting the feedback of its application which the time did not allow for.

1 . 7 Thesis Organization

This thesis is organized into six chapters as follows:

Chapter one is the introduction to force majeure concept and the importance of drafting a force majeure clause in construction contracts. It also includes the problem statement and the thesis objective and organization.

Chapter Two is a literature review of the concept of force majeure and how several legal systems and civil codes deal with such concept. Moreover, how the FIDIC contract, as one of the famous international standard construction contracts, deals with the risk of force majeure.

Chapter Three presents the research methodology and introduces the proposed framework. It also explains the questionnaire survey, its preparation and steps.

Chapter Four evaluates the results obtained from the questionnaire and provides an analysis of such results and data.

Chapter Five presents the model development of the force majeure clause and discusses its provisions. In addition, the chapter demonstrates the verification of the developed model clause.

Finally, Chapter Six is the summary and conclusion of the research findings. It includes the contributions and the limitations of the research. Figure 3 below show the thesis structure including the six constituent chapters.

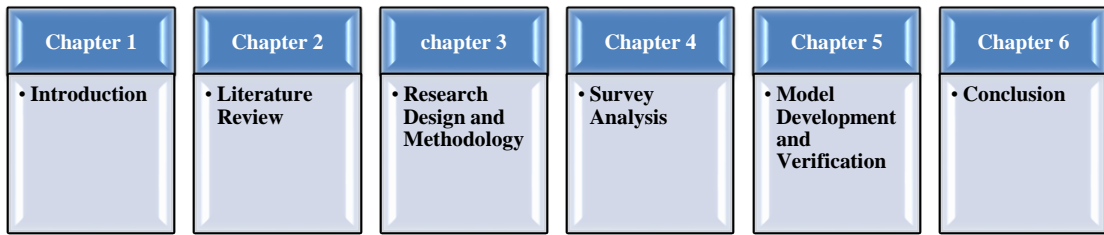


Figure 3: Thesis Structure

CHAPTER 2 : LITERATURE REVIEW

2.1 Force Majeure in Civil Law

Force majeure is a concept widely understood and accepted throughout the world, although the definition and interpretation of the events constituting force majeure and their consequences vary from one jurisdiction to another. Force majeure event is generally defined as the circumstance under which the party suffers from a non-default, unforeseen, unexpected and out of control incident which provides an excuse from further performance of the contract (Haley, 1999).

Force majeure, basically, is a civil law concept derived from the Roman law and is similar to some extent to frustration in contracts in common law. Such concept was adopted and recognized by the codes of the civil law countries particularly in the French Civil Code. When a force majeure event takes place, parties of the contract are excused from performing their obligations. According to French civil law, an event is considered as force majeure if it is external, unexpected and unavoidable (Azfar, 2012).

Hagedoorn & Hesen (2007) have discussed the legal consequences of force majeure. According to their study, such consequences are concluded either in termination or suspension of the contractual relationship. If the contract is terminated, each of the contracting parties shall carry his own risk and the consequences of such risk, which often means that the debtor shall have the burden of the consequences of termination. In some cases, the parties are compensated for the part of work already performed before the date of occurrence of the event constituting the force majeure (Hagedoorn & Hesen, 2007).

In so many cases, an external event may only cause a temporary impossibility of performance. This is often the case where performing a contract has been disrupted for a limited period of time, and it is foreseen that performance can be resumed after

the causes of the impossibility (e. g., strike, rebellion, war, flood, revolution, acts of terrorism, etc.), or the aftermath of those causes, cease to exist. In such case, the execution of a contract will be suspended rather than terminated (Amkhan A. , 1991).

The definition of the requirements to apply the force majeure concept are not unified worldwide. Different approaches are applied by different laws and jurisdictions (Augenblick & Rousseau, 2012). Hereinafter, the concept of force majeure, its events and consequences are discussed in light of the civil law jurisdiction in Egypt and some Arab and European countries.

2 . 1 . 1 Force Majeure in Egyptian Civil Law

Although force majeure is not specifically defined under Egyptian law, the force majeure concept is mentioned in article 165 of the Egyptian Civil Code which states “In the absence of a provision of the law or an agreement to the contrary, a person is not liable to make reparation, if he proves that the damage resulted from a cause beyond his control, such as unforeseen circumstances, Force Majeure, the fault of the victim or of a third party.” (The Civil Code, 1948). According to the article, and based on precedents issued by the Egyptian Cassation Court, to apply the Force Majeure concept, two conditions must be achieved: the impossibility of performing the obligations due to an event that was not expected or the debtor could not prevent or avoid; and the reason for performance impossibility is a foreign cause out of the debtor control and not caused by him (legal week law - Force Majeure under Egyptian Law, 2011).

The concept of impossibility is also mentioned in the following articles in Egyptian Civil Code: Article 159 "In contracts binding to the two parties, if an obligation is terminated as a result of impossibility of its implementation, counter obligation shall also be terminated and the contract shall be rescinded by itself" (The Civil Code, 1948). Article 373 also addresses force majeure and provides that: "An

obligation shall be terminated if the debtor proves that fulfillment has become impossible for an alien reason in which he has no hand" and Article 664 deals with the force majeure in construction contracts particularly and states that "The construction contract is terminated with the impossibility of carrying out the work for which the contract is concluded" (Bälz & Ragheb, 2014). Moreover, Article 665-1 illustrates the responsibility of the contractor about the supplied materials upon occurrence of a sudden accident: "If an object perished because of a sudden accident before it is delivered to the employer, the contractor shall neither be entitled to claim the cost of work nor to be reimbursed for his expenses. The destruction of the material shall be borne by the party who supplied it" (The Civil Code, 1948).

2 . 1 . 1 . 1 Theory of Unforeseen Circumstances in Egyptian Civil Law

Article 147-2 of the Egyptian Civil Law has enshrined the doctrine of "unforeseen circumstances". Such article states "When, however, as a result of exceptional and unpredictable events of a general character, the performance of contractual obligations, without becoming impossible, becomes excessively onerous in such a way as to threaten the debtor with exorbitant loss, the judge may, according to the circumstances, and after taking into consideration the interests of both parties, reduce to reasonable limits, the obligation that has become excessive. Any agreement to the contrary is void" (The Civil Code, 1948).

By the force of Article 147, in case the obligation has become so burdensome to the debtor that it threatens him with a great loss, the judge is granted a discretionary authority to reduce the burdensome obligation and return it to a reasonable extent. This discretionary authority cannot be excluded by contract even if the parties have agreed to exclude it upon concluding the contract. It is worth noticed that the term "excessively onerous" used by the article is of a standard lower than "impossibility". However, the

article is not applicable unless the event has certain characteristics; a general exceptional incident with an emergency character and unexpected for the ordinary person (regardless of whether the other party of the contract has actually predicted its occurrence or not). The Egyptian Cassation Court judicial decision dated June 22, 1957 (year 13 J) has added two conditions to apply the article; the contract must be of a long term character and the event must be unavoidable. On the other hand, force majeure concept is addressed by article 373 of the Egyptian Civil Code which provides that the obligations are extinguished if the debtor proves that its performance of the contract obligations has become impossible as a result of events out of his control. The impossibility is the standard in such instance which is a higher standard than merely an obligation becoming "excessively onerous". When a contract is extinguished because of impossibility of performance, obligations are extinguished also and consequently the contract is terminated. On contrary, under Article 147, the contractual obligations are not extinguished but rather adjusted to restore the economic equilibrium between contract parties (lexology - Unforeseen Circumstances, 2009).

2 . 1 . 2 Force Majeure in Emeriti Civil Law

The Emeriti Civil Code is, to a great extent, similar to the Egyptian Civil code in dealing with force majeure. Article 273 in the Emeriti Civil Code has a very close meaning to article 159 in Egyptian Code. Article 273 states that: "(1) In contracts binding on both parties, if force majeure event occurs and makes the implementation of the contract impossible, the corresponding obligation shall cease, and the contract shall be automatically terminated. (2) In the case of partial impossibility, that part of the contract which is impossible shall be extinguished, and the same shall apply to temporary impossibility in continuing contracts, and in those two cases it shall be

permissible for the obligor to terminate the contract subject to notifying the other party" (Emeriti Civil Law, 1985).

Moreover, Article 287 in Emeriti Code is quite similar to article 373 in Egyptian Code. Article 287 states that: "If a person establishes that the loss arose out of an extraneous cause in which he played no part such as a natural disaster, unavoidable accident, force majeure, act of a third party, or act of that person himself, he shall not be bound to rectify the losses unless there is a legal provision or agreement to the contrary" (Emeriti Civil Law, 1985).

Article 386 is also dealing with force majeure by stating: "If it is impossible for an obligor to give specific performance of his obligation, he shall be ordered to pay compensation to the other party for such non-performance of the obligation, unless it is proved that the impossibility of performance was a result of an external cause in which the obligor has no hand. The same shall apply in case that the obligor delayed in the performance of his obligation".

2 . 1 . 3 Force Majeure in Qatari Civil Code

Force majeure doctrine is expressly mentioned in Qatari legislation. According to Article 204 "If the person produces evidence that the damage was caused by alien cause with which he has nothing to do such as a sudden accident as force majeure or a mistake of a wronged person or a mistake of a third party, he shall not be bound to pay damages unless there is a provision prescribing otherwise" (Qatari Civil Law, 2004). Again this article deals with force majeure in the same way as Article 165 in Egyptian Civil Code and article 273 in Emeriti Civil Code.

2 . 1 . 4 Force Majeure in Algerian Civil Law

In Algerian Civil Law, it is a general principle that any event amounting to force majeure is a viable defense which, if successfully proven, exonerates the wrongdoer

from liability. Article 127 establishes this principle by stating: "Save for a legal or contractual obligation, a person is relieved from the obligation to repair damages if he proves that said damages were caused by external factors, such as a fortuitous event, a force majeure, the victim's fault or a third-party's fault" (Algerian Civil Law, 2007).

2 . 1 . 5 Force Majeure in Lebanese Civil Code

In Lebanese Code of Obligations and Contracts, Art 341 explicitly adds that the act of legislation could be an event of force majeure. The article states: "The obligation is extinguished when the performance, which constitutes its object, has become impossible, either naturally or judicially, without the debtor's fault or mistake" (Lebanese Code of Obligations and Contracts, 1932).

2 . 1 . 6 Force Majeure in French Civil Law

In French Civil Code, force majeure is mentioned in two Articles, 1147 and 1148. The first article states that the debtor is obliged to pay for the damages, whether for non-performance or the delay of the obligation, if he does not establish that the failure to perform derives from an extraneous cause which cannot be imputed to him, even though he has no bad faith. Under the second article, there is no place for compensation when, as a result of a force majeure or an accident, the debtor has been prevented from doing what he was obliged to or has done what was forbidden to him. Despite that, force majeure is not a public policy theory, so parties of the contract can deviate from the provisions of the law regarding the definitions of what is considered a force majeure event and the consequences of such event (Kessedjian, 2005).

2 . 1 . 7 Force Majeure in German Civil Code

The German law has a concept that is similar to force majeure which is the concept of 'contractual impossibility'. Such concept is composed of two distinct doctrines. The first

doctrine is known as 'the collapse of the bases of the contract' which is, to a great extent, similar to the doctrine of 'hardship'. The other doctrine is the 'objective impossibility', which is codified under Article 275 of the German Civil Code (Impossibility for which one is not responsible) (Polkinghorne & Rosenberg, 2015).

The mentioned article states: "(1) the debtor is relieved from his obligation to perform if such performance becomes impossible as a result of circumstances, for which he is not responsible, that occur after the commencement of the obligation. (2) the debtor's inability to perform after the commencement of the obligation is equivalent to subsequent impossibility of performance" (German Civil Code, 1900). It is clearly obvious from the context of the article that the doctrine of 'objective impossibility' is similar to the French law concept of force majeure. Moreover, the events and circumstances which might be considered attributable to the doctrine of 'objective impossibility' are limited.

2 . 1 . 8 Force Majeure in Italian Civil Law

In Italian regulation, an event is considered a Force Majeure if it is extraordinary, beyond the normal cases and beyond the contingencies that the contract party can reasonably take their effects into consideration when pricing the contract so that he can continue working without disruptions. Such approach was codified by the Italian regulator in 2000. Force Majeure events include civil disturbance, revolutions, strikes, acts of governmental bodies or authorities and exceptional natural events leading to natural disasters such as volcanos, floods and earthquakes (Fumagalli, Schiavo, Salvati, & Secchi, 2006).

The force majeure in Italian Civil Code is mentioned in Article 1256 which states:"The obligation is extinguished when, for reasons not attributable to the debtor, the performance becomes impossible. If the impossibility is temporary, the debtor, as

long as it lasts, is not responsible for such delay. However, the obligation is extinguished if the impossibility persists until, subject to the title of the obligation or the nature of the object, the debtor can no longer be considered obliged to perform the contract or the creditor has no longer any interest in achieving it" (Italian Civil code, 1942).

2 . 1 . 9 Force Majeure Dutch Civil Law

The concept of force majeure is applicable in Dutch Civil Code and indicated in Article 6:75 "Legal Excuse for a Non-Performance" which provided that: "A non-performance shall never be attributed to the debtor if he is not to blame for it nor responsible for it according to law, a juridical act or generally accepted principles" (Dutch Civil Law, 1992).

It is clearly mentioned from the study of the force majeure in civil law countries that the concept is, almost, dealt with in the several civil codes in the same way. This is due two reasons: First, the civil law is originated by the French code which is derived in turn from the old Roman law. Second, the drafting of the civil codes in Egypt, Libya, Syria, Iraq and other Arab countries was conducted by the same Professor of Law, the late Dr. Abd El-Razzak El-Sanhuri.

2 . 2 Force Majeure in Common Law

Several comparative studies has been conducted between civil law systems and common law systems regarding the force majeure concept. According to Amkhan, 1991 in his paper entitled "Force majeure and impossibility of performance in Arab contract law", comparatively speaking, the concept of force majeure, which is an effective theory in civil law legal system, does not exist in the general English common law. Despite the term is sometimes recognized and applied in contracts governed by common law, such application is limited, in respect of events and consequences, to what

has been expressly agreed between contract parties. So, the context of the force majeure clause and its provisions define the extent of the application of the theory and its boundaries of coverage. Furthermore, although the principle of force majeure is absent in English law, it is a fact that the doctrines of impossibility of performance and frustration are, to some extent, similar in certain aspects to force majeure concept. Therefore, it could be concluded that the general idea of the legal principle of force majeure has been applied, in one form or another, by most of the legal systems worldwide (Amkhan A. , 1991).

The alternatives of force majeure concept in common law has been stated in a study conducted by Augenblick et al (2012). According to such study, the concept of force majeure was originally established in France in the Napoleonic Code. Afterwards, the concept alternatives have been applied in common law countries. Such alternatives were "physical impossibility" and "frustration of purpose" in United Kingdom and "commercial impracticability" in United States. The impossibility was tested in common law on the objective basis; i.e. whether the performance of the obligations was absolutely or physically impossible (Augenblick *et al*, 2012). The same was discussed by Hariri in his article entitled "Force Majeure, A Comparative Approach to Different Legal Systems". The article mentioned that the force majeure concept is not used in common law legal system. However, the concept is investigated under the titles "impossibility" or "Termination of the contract". In fact, force majeure concept is different from these legal entities which only cover the subjects that hinder the contract performance. Nevertheless, the rules of common law system and its related doctrines have led to similar results with force majeure (Hariri, 2013).

Akbiyikli, Dikmen, & Eatonin also stated that the force majeure is a legal concept that originated from Roman law and is existing in many civil law codes all over

the world. Under French law, for example, if the performance of the obligations became impossible as a result of external unexpected and unavoidable event, then the affected party may be excused from performing his contractual obligations or part thereof. On the other side, the doctrines of impracticability and frustration of contract in Common law system are analogous (but not identical) to force majeure concept (Akbiyikli, Dikmen, & Eaton, 2012).

The similarity of the event characteristics in civil and common law legal systems has been discussed by Augenblick *et al*, the event must have been unforeseeable at the time of executing the contract for a force majeure defense to be effective. Courts and Tribunals state that failure to protect oneself against a foreseeable event does not excuse from the consequences and damages resulted from it. The party incurred such damages should have assumed the risk of that event. (Augenblick *et al*, 2012).

2 . 2 . 1 No-Fault Liability

Perillo (1997) pointed out that in the common law systems, contract liability is no-fault liability. However, lately some sort for excuse has been allowed. Despite in civil law system the fault is considered to have a greater role regarding the breach of contractual liability than in the common law system, there are some exceptions in common law system presented in the doctrines of hardship, frustration of contract and impossibility of performance (Perillo, 1997). Similarly, Augenblick *et al* (2012) argued that the Contractor is responsible for mitigating the effects of his strict contractual liability by any mean such as including the Force Majeure clause in the Contract. Under the United States law, for example, contract liability is a very firm liability and the concept of "pacta sunt servanda" is to be respected. Therefore, the obligor is totally liable in damages resulting from breach of contract even if he did not make any fault

and even if his contractual obligations become much more onerous and the contract becomes financially unbalanced. (Augenblick *et al*, 2012).

In further support of the finding, Theroux & Grosse (2011) affirmed that contracts were absolute under the traditional common law. Therefore, the contract parties were obliged to perform their duties even if such performance had become impossible because of certain events. Only the provisions of the agreement was the way to avoid such situation. The parties have to include in their agreement provisions protecting them from the consequences of the contingency. If they did not do so, according to court decisions, the affected party had to perform his obligations, otherwise be liable for breach (Theroux & Grosse, 2011).

The contract parties in common law do not trust the courts, but mind their own business having force majeure clauses put into the contract as detailed as possible. In civil law contracts, contrary to common law tradition, parties used to trust the general principle of good faith to govern force majeure disputes, thus to keep such clauses brief. In general, they already, by custom, keep contracts as concise as possible, in the same faith. (Van Dunne, 2002). It is required to achieve contractual equilibrium in case of occurrence of extraordinary events. The equilibrium, in this regard, means the fair allocation of the risk among contract parties. Such allocation of risk is affected by several factors including the contract type, dispute resolution mechanism and the legal system governing the contract. For example, in common law system, no cost increase is allowed under a fixed reliable legal standard. Moreover, there is no precedent in court decisions in this regard. Meanwhile, in civil law system such increase is allowed in many cases (Girsberger & Zapolskis, 2012).

While force majeure is a considered concept in civil law, it is vital to include an explicit force majeure clause in contracts governed by English law. This is because

English law does not provide any cost compensation for the affected party in case of economic imbalance of the contract while civil law provides such remedy. During economic uncertainty periods, in particular, contract equilibrium should be strongly taken into consideration especially in long term contracts (Walton & Bellhouse, 2012).

2 . 2 . 2 Frustration Doctrine

While the force majeure concept is adopted by civil law system, the doctrine of frustration is adopted by common law system. In her paper entitled "Competing Approaches to Force Majeure and Hardship", Kessedjian explained that generally, the non-performing party is not excused by unforeseen circumstances in English law. Application of the doctrine of frustration determines whether the defaulting party is exempted from nonperforming its obligations if extraordinary events occur after entering into the contract. If a supervening event happens and materially hinders one or more of the contract parties from performing contractual obligations so that the contract cannot be continued, the contract is said to be frustrated. When the contract is frustrated, the contractual relationship is consequently expired even if the parties did not want that. On the other hand, if the contract is not frustrated, the parties are obliged to continue performing their duties, regardless the difficulty of such performance and regardless the change in circumstances. In such case, the courts have no authority to restore the contract financial equilibrium and neither party is bound to compensate the other. In other words, force majeure and hardship are entirely left to contractual provisions in English common law (Kessedjian, 2005).

Van Dunne's (2002) view on frustration of contract was in the same firm line. He indicated that the doctrine of frustration was developed to reduce the severances of the common law and its strictness in execution the contracts literally. The doctrine aims to apply the rules of justice and equity and to achieve reasonable solutions that protect

the parties of the contract from an excessive loss as a result of the literal performance of the contract upon occurrence of an adverse change in circumstances. On the other hand, the frustration has a significant disadvantage as it leads to the collapse of the contract instantly and automatically and excuses the parties from future performance of their obligations. So, the doctrine should not be easily invoked and to be applied in very narrow limits in order to maintain the stability and steadiness of contractual relationships. It is worth mentioning that the frustration should not be due to reasons attributable to the party who claims it. On the contrary, the events causing frustration should be beyond the parties' control and expectations and without any fault of the party seeking to rely on it (Van Dunne, 2002).

2 . 2 . 3 Hardship Doctrine

Most countries worldwide have enacted laws to cover the cases of exceptional circumstances and have addressed such cases as hardship. The concept of hardship is applied by courts in some countries such as Switzerland, Austria, Turkey, Romania and Spain despite the wide variety in hardship principle in such countries. Although the existence of such variety, the core of the principle suggests that the hardship is resulted from occurrence of supervening events disrupting the performance of the contract obligations which, in turn, leads to sever economical unbalance between contract parties. The effect of the aforementioned unbalance ranges between the excessive increase in the costs of performance and sharp reduction in the level of performance. Nevertheless, the provisions of laws and legal instruments never help in determination of the numerical amount of such unbalance and consequently never quantify the necessary compensation for the affected party. Such role is usually done by the courts and arbitral tribunals which provide their assessment on a case-by-case basis according to the surrounding circumstances and conditions (Girsberger *et al*, 2012).

In 2009, Brunner compared between the concepts of hardship and force majeure. Force majeure concept and doctrine of hardship are correlated to each other as the basis of both is the same. Hardship is considered as a particular case of force majeure where the performance encounters obstacles as a result of change in circumstances. Both force majeure and hardship result in drastic change in risk allocation and, consequently, the contract equilibrium. Meanwhile, both are different in legal consequences as force majeure constitutes an excuse from performing the obligations but hardship does not constitute such excuse because the change in contract equilibrium, alone, does not make performance of the contractual obligations physically impossible but make it impracticable in light the original terms and conditions of the contract. Therefore, hardship requires flexibility in the legal solution as the disadvantaged party shall have the right to renegotiate the contract conditions in his favor. If such negotiation failed, the court may intervene by compensating the disadvantaged party or reducing some of his obligations in order to restore the economic equilibrium of the contract (Brunner, 2009).

2 . 2 . 4 Impossibility and Practicability Doctrine

It is generally accepted in both common and civil law systems that the performance of the contractual obligations which becomes impossible or commercially impracticable under certain adverse extraordinary circumstances might be ceased. The question here is under which circumstances the performance will be ceased? Actually, there is not unanimity of the approach in the several legal systems. Moreover, most courts and tribunals recognize the standard of commercial impracticability so that performance is excused when it is not practical and could be done only at unreasonable excessive cost (Augenblick *et al*, 2012).

The concept of impossibility was also discussed by Wehle who revealed that under Roman-Civil law, notably French and German, impossibility of performance due to force majeure releases the obligor from liability. Anglo-American common law, using the act of God as the preventing force, ordinarily does not relieve the obligor from his duties unless the court is inspired the excuse by interpreting the terms and conditions of the contract that are related to such impossibility. Moreover, in American law, where the act of God calls for a higher degree of foreseeability and irresistibility than do the above Latin, French and German expressions for impossibility, there are also rigid limitations on invoking the concept of impossibility as a defense (Wehle, 1950).

2.2.5 Common Law Cases

The following two cases illustrate the application of common law doctrine of frustration in the court of appeal in the United Kingdom. The cases show the rigidity of the application of the doctrine and the urgent need to incorporate a detailed comprehensive force majeure clause in the contracts governed by the common law legal system.

2.2.5.1 Davis Contractors Ltd v Fareham Urban District Council [1956]

A contract was concluded by and between Davis Contractors and Fareham Urban District Council to build a number of houses in a period of eight months for a certain amount. Actually it took Davis twenty two months because of shortage of materials and labor and consequently the cost of construction severely increased. Davis claimed that the contract was frustrated, void, and hence they were entitled to quantum meruit for the volume of work performed. The court held that the contract was not frustrated despite its performance had become more onerous.

Lord Radcliffe argued that saying frustration was an implied term was fanciful, because people must write down what they believe to be unforeseeable events. He also

said that frustration takes place when the law recognizes that, without default of any of the parties, a contractual obligation has become unable to be performed because of radical changes in circumstances that the contract was based on. In other words, it was not this that what a contract party promised to do. In the same case Lord Reid concurred with the result and said that frustration is not to be lightly invoked as the dissolvent of a contract. Argument that failed as well was that a term was expressly incorporated mentioning that the contract amount was based on the fact that there are adequate supplies of materials and labor (McLauchlan, 2013).

2 . 2 . 5 . 2 Lauritzen A.S. v Wijsmuller B.V, (The Super Servant Two) [1990]

In this case, defendants agreed to transport an oil drilling rig owned by the claimants from Japan to Rotterdam. The provisions of the contract mentioned that the defendants had the ability to transport the oil rig using one of either two ships, the Super Servant One or the Super Servant Two. As the first ship was busy being used for another contract, the defendants had to use the second ship. Before starting the transportation obligation, the ship Super Servant Two was sunk in the Republic of Congo in July 1981 while performing another job. The defendants claimed that the contract has been frustrated as they were unable to transport the rig and the claimants argued that the impossibility of executing the contract was self-induced and that therefore the defendants should not be discharged of performing their contractual obligations. The Court of Appeal held that the doctrine of frustration is not applicable in the case, consequently, the defendants could not rely on it and they had to transport the rig regardless any additional costs they might incur.

Lord Bingham, the judge, stated that it is not open to question that the frustration doctrine was developed to mitigate the rigidity of the common law represented in the necessity of the literal performance of absolute promises. He added that the aim of the

doctrine was to achieve justice and to get fair reasonable consequences when a significant unexpected change in circumstances occurred, however, it would be recognized that the court does not have a broad absolute power to ignore the contract terms if a drastic change of circumstances resulted in hardship or inability to perform the obligations under the contract (McLauchlan, 2013).

2.3 Force Majeure in Construction Contracts

2.3.1 Force Majeure Clause in Construction Contracts

The force majeure clause in construction contracts is a standard clause that excuses the parties from performing their contractual obligations for external causes that are unexpected and uncontrollable (Aljarosha, 2008).

The aims of incorporating the force majeure clause into the construction contracts have been discussed in several studies. In his paper entitled “Force Majeure Delays”, Wright (2006) has mentioned such aims and asserted that the force majeure clause achieves two goals: it allocates risk between contract parties and provides notice, to the parties, of the events which may interrupt or excuse their performance. The possible risks in performing a construction contract, however, are so numerous that they mostly cannot be taken into consideration at the time of execution of the contract. For example, contract parties may think that the term “act of war” would apply to the events of terrorist threat or attack, but such logic is not followed by Courts. In construction field, the term "force majeure" refers to certain events and circumstances that are considered beyond and above the control of contract parties and that could not reasonably be predicted or avoided even by the due diligence and care of any of the parties. Though occurrence of a force majeure event may entitle the contractor to an extension of time for completion, it usually does not allow it to be compensated for the damages and losses resulting from the time prolongation. Moreover, it is vital

mentioning that the force majeure clause is interpreted in each circumstance with exacting attention to the specific context and wording of its provisions as the effect and scope of the clause might be varied from one contract to another. Thus, careful drafting is essential, with due consideration of all perils that may befall a construction project (Wright W. C., 2006).

Similarly, Ajayi and Opasanya (2007) studied the benefits of inserting the force majeure clause in contracts. According to this study, a force majeure clause is a provision aimed at exonerating a party to a contract from the consequences of failure to perform its obligations caused by supervening events. It is important to note that despite the wide use of force majeure clauses in most international business agreements, force majeure is basically a civil law concept which has been accepted as a contractual tool and enforced as such by common law courts (Ajayi & Opasanya, 2007). These clauses relieve a contract party from performing his obligations if an adverse unforeseen event beyond its expectations and control prevent the performance. The purpose of these clauses is to stipulate a list of the adverse events, to provide notice of them and to allocate the risk resulting from the occurrence of such events (Augenblick *et al*, 2012). The inclusion of force majeure or hardship clauses in the contracts and implementation of them provide an evidence to the intention of the contract parties to overcome the adverse effects of the unexpected circumstances and keep their contractual relationship in force (Hagedoorn & Heslen, 2007).

Theroux *et al* (2011) has noted that need for force majeure clauses is increased as a result of the restricted limits of the doctrine of frustration which is one of the common law doctrines. First, the clause can provide more certainty than the doctrine of frustration which application is often hard to predict. Second, drafting the clause helps the contract parties to list the extraordinary events that may affect the performance of

their obligations and change the risk allocation even if they are not considered as frustration events in the eyes of the common law. Third, through the clause, the parties can agree on the consequences of the supervening events and their effects on a parties' obligations while the concept of frustration limits the available relief to full discharge of the obligations and thus brings the contract to an end forthwith. Less sever remedies, like suspension of the work of part of it, can be agreed upon and addressed in the clause. Moreover, different remedies can be stated for different kinds of events (Theroux *et al*, 2011).

To be exempted from his contractual obligations under the concept of force majeure, a contract party should provide an evidence that the event was out of his control, unexpected and could not be avoided. This is likely become difficult as the effects of the devastating events in many cases can be predicted. Moreover, practically any type of imaginable event could be considered as foreseeable. Therefore, drafting a comprehensive and detailed force majeure clause is very crucial in order to avoid the narrow and restricted interpretation of force majeure. The clause should address all events that may affect the performance in light to the nature of the works under the contract. Due attention should be paid to the particular circumstances of the contract, competent judiciary, market variables, the country and the location of the project and other conditions which may have a significant impact on the performance of the contract. This is because unless the kind of event is listed in particular in the clause, virtually no external event will be deemed unforeseeable and constitute force majeure excusing parties' obligations (Augenblick *et al*, 2012).

In her paper entitled "The Contract Law aftermath of September 11", Reynolds (2011) discussed the purpose of force majeure clauses in contracts and demonstrated, in principle, the types of events that constitutes Force majeure. The purpose of including

Force majeure clauses in contracts is to relieve the non-performing party from its contractual obligations if he faces certain events out of his control and his expectations. Such events cause drastic change in circumstances and thence a hardship for the party. The reason for the relieve from liability is that the affected party did not take these events into account when developing the study of the contract and setting its prices for performing it, therefore it will not be fair to force him to continue performing his obligations under the occurrence of such events. It is worth mentioning that it is not necessary that events of force majeure lead to relief from performance entirely, but they may lead to relief from performing of the obligations for a certain time limit, afterwards, the party can continue performance once these events are elapsed. Moreover, the affected party shall have another type of obligations as a result of the occurrence of force majeure events such as an obligation to notify the performing party of the occurrence of the event and another strict obligation to use, in every good will, his endeavor to to mitigate the impact of the event (Reynolds, 2001)

Reynolds also listed the events that are often stated in force majeure clauses and confirmed that there are standard events that appear in most clauses whatever the type of contract. The force majeure clause aims to absolve the obligee from the fault of non-performance of his duties that is arises out of such standard events including acts of war and terrorism, acts of God and natural disasters, acts of third parties such as the government, authorities, carriers and suppliers, explosive materials, ionizing radiations, revolutions, rebellion and civil disturbances. The events of force majeure are not limited to the mentioned main events but also include other events that are highly negotiable between the contract parties and may be attributable to the type of services provided, type of contract, territory of application of the contract and the parties themselves (Reynolds, 2001).

2.3.2 Standard Construction Contracts

In construction field, there are tailor made contracts and there are standards contracts published by professional associations. Such standard contracts are very important to the construction industry for many reasons. First, they provide a fair and balanced allocation of risks and responsibilities between contract parties. Second, they make it easy for the parties to negotiate their contract effectively without exerting much time or cost. Third, they can provide a common language between the different entities that should interact together to achieve the objectives of the construction project. Fourth, they contain detailed well-drafted provisions covering all the aspects of the construction contract and match its complex nature. Fifth, the standardized contract that is acceptable by the parties involving in the construction industry makes the performance of the contracts more efficient. Sixth, familiarity of the parties to the contract and their deep understanding to it makes work implementation easier. Finally, standard contracts do not negate the right of the contracting parties to establish particular conditions regarding the variable terms, such as the fees, terms of payment, time for completion, scope of work, mechanism of dispute resolution and so on. Obviously, standard contract provide a great benefit to those who execute several construction projects (Sweet, 1989).

2.3.3 FIDIC Form of Contracts

FIDIC, the International Federation of Consulting Engineers, is the international Federation of the elected associations who represent the field of consulting engineers in their countries. Membership in the Federation is limited to one association per each country. For being one of the members of the Federation, each association should affirm and prove that its regulations and bylaws match with the code of ethics and practice of the consulting engineers according to the principles agreed and issued by the

Federation. Several alterations have been incorporated to such principles over the years and recently significant changes were also applied (Bunni, 2013).

FIDIC has produced standard forms of contract for construction projects to address several types of procurements. The most frequently used form is the red book, fourth edition 1987, which is prepared to the execution of works where design is carried out by the employer. MDBs, Multilateral Development Banks including the World Bank, have harmonized the red book to accommodate their rules and provisions regarding construction projects. In addition to the red book, FIDIC produced the orange book, 1995 edition, for design - build construction projects (Ndekugri, Smith, & Hughes, 2007). In 1999, FIDIC has published a suit of contracts including the updated edition of the red book, the green book which is a short form of contract for construction work, the yellow book for plant and design-build projects and the silver book for EPC (engineering-procurement-construction) /turnkey projects. Most of the forms consist of twenty clauses and have similar arrangement and sequence (Kokosal, 2011).

2 . 3 . 3 . 1 Force Majeure Clause in FIDIC Contract

FIDIC red book 1999 edition, contract for construction projects where the design is carried out by the employer, has provided a clause for force majeure and its provisions. Clause 19 in such contract deals with force majeure in its aspects; events, obligation of parties and consequences. Sub-Clause 19.1 defines the nature of force majeure events and list groups of such events. Sub-Clause 19.2 demonstrates that that force majeure must hinder a party of the contract from performing its duties and obligations or part of them. Furthermore, it mentions the obligation of the affected party to notify the other party within 14 days from the date of occurrence of the force majeure event. Under Sub-Clause 19.3, other notification should be sent when the party ceases to be affected by the event. According to Sub-clause 19.4, the consequences of force

majeure are represented in either an extension of time for completion or cost compensation or both. The Engineer is responsible to assess the contractor's claim in that regard and issue his determination. Sub-Clause 19.5 determines that if a subcontractor is granted an excuse in broader limits than those in Clause 19, the contractor shall not be entitled to additional relief based on such broader limit of excuse. Sub-Clause 19.6 states the right of parties to terminate the contract if the force majeure event hinders the performance for a certain period or periods. The party who decides to terminate should notify the other party for such termination and in 7 days after the notice, the contract shall terminate. The Sub-Clause further provides the basis of the payment upon termination. Finally, Sub-Clause 19.7 states that the contract shall be terminated if the work becomes impossible either because of a war, flood or earthquake or the performance becomes illegal according to applicable law of the contract. The contractor, in this case, shall be entitled to payment on the same basis demonstrated in Sub-Clause 19.6 (Seppala, 2000).

2 . 3 . 3 . 2 Employer's Risk in FIDIC Contract

Besides Clause 19 in the FIDIC Red Book 1999 edition which deals with force majeure, there is Sub-Clause 17.4 which deals with employer's risk. According to such sub-clause, if the project is damaged as a result of occurrence of one of the employer's risk, the contractor shall be obliged to rectify such damage and follow the instructions issued to him by the employer and the engineer in that regards. If such rectification causes financial losses or time delay to the contractor, the contractor shall be entitled to cost compensation or time extension or both together (Seppala, 2000).

As it is clearly understood from the title of Sub-Clause 17.3 of FIDIC 99 edition, the employer carries the burden of employer's risks. Referring to sub clause 17.4, if the work or part thereof is damaged because of any of the employer's risks, the contractor

shall rectify such damage upon engineer's request and the employer shall pay the cost of the rectification. Moreover, if the contractor suffers any delay as a result of his compliance to engineer's instructions to rectify the damage, he shall be entitled to an extension of time for completion. Item (h) of Sub-Clause 17.3 mentions all act of God, including adverse climatic conditions, which is unforeseeable to the contractor. Normally, the adverse climatic conditions gives an entitlement to the contractor to an extension of time only without cost compensation. However, if such climatic conditions satisfies the criteria mentioned in the employer's risks, it may result in cost compensation also. The cost compensation will not be the only remedy to the contractor with respect to subparagraphs (f) and (g), but he will be entitled also to get addition of profit. This is because the damage in this case was not resulted from a foreign cause but the employer or one of his personal caused such damage (El-adaway & Fawzy, 2012).

2 . 3 . 4 The NEC Third Edition

NEC is a family of forms of contracts that facilitates the implementation of the principals of project management as well as establishing legal and contractual relationships (Wright & Fergusson, 2009).

The Third edition of the NEC form of contract which was published in July 2005, edition does not have a force majeure clause. However, referring to the guidance notes, clause 60.1 can be considered as a force majeure clause as it concerns with events that neither party could predict or avoid and cause a delay in the agreed upon time program or prevent the contractor from completing the project. Consequently the clause is deals with the same issue as clause 19 in FIDIC but the drafting of the clause in NEC is plainly too broad. Therefore, under common law jurisdictions, this will decrease the protection will be provided to the Contractor upon occurrence of force majeure events (Glover, 2006).

2 . 3 . 5 The JCT Suite of Contracts

Force Majeure is not explicitly defined in the JCT form of contract, however, clause 2.29.14 mentions that events out of parties control may entitle the contractor to an extension of time and clause 8.11 gives the both parties right to terminate the contract as a result of such events. Therefore, because the term is not defined in the JCT suit, any event that the court may consider as force majeure could form a basis of a time claim under clause 2.29. However, the application of the term force majeure is not clear because the absence of its definition in the contract, moreover, there is no definitive guidance from the courts on its legal meaning.

Consequently, to avoid the uncertainty about the narrow interpretation of the term by the court, the parties to JCT contract should amend the general conditions of the contract to expressly define force majeure in order to enable them relying on force majeure either for an extension of the project time or for termination of the contractual relationship (Interpreting force majeure in the JCT suite, 2012).

CHAPTER 3 : RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

The previous chapter discussed the bases of this research focusing on the concept of force majeure, other related doctrines in various legal systems and force majeure clause in FIDIC contract. This chapter will discuss the methodology used in determining the attitudes and opinions of those in the industry concerning the proper context of force majeure clause that match with different legal systems and families of law.

In order for a research project to meet its objectives, use of an effective methodology to aid in the analysis of the issue at hand is indispensable. According to the University of Southern California, the research design indicates the overall technique to select in order to combine the various parts of the study cohesively and logically, and to hence ascertain that the research problem is dealt with efficiently. The constructive research design also lays the foundation for gathering, measuring, as well as analyzing all relevant data. Contrary to some people's perception, the kind of design to be used is determined by the research problem chosen, not vice versa (University of Southern California, 2015). A methodology of qualitative research will be used in gauging attitudes and observations of industry professionals who are involved in construction projects and who are involved in contracts administration career.

The aim of this chapter is to give a detailed explanation of the methodology and design that were used in conducting this research. This chapter shows the rationale for selecting the most suitable techniques in the research method and data collection.

In this study, as the initial step in the research procedure, essential data was gathered through a field survey using structured questionnaires. This survey focused on

the opinions and perceptions of the experts in construction industry whether the organization they are working for could be classified as an employer, a contractor or a consultancy firm.

3 . 2 General Assumptions

Guidelines in research mention that, generally, the researcher reveals his biases or assumptions regarding the phenomenon under investigation. By setting aside preconceptions and eliminating these prejudgments, the researcher can more fully understand the experience of the subjects (Creswell, 2007). The researcher believes that adopting a comprehensive and integral force majeure clause in construction contracts will be an added value to the parties of the contract and shall contribute in reducing the causes of loss, hence the causes of disputes and the probability of terminated and uncompleted projects. Moreover, the provisions force majeure clause could not be the same for all cases but they might be varied according to the contract applicable law.

3 . 3 Qualitative Method

Clissett (2008) argues that qualitative research is a term which describes numerous approaches used for the purpose of exploring human perceptions, experience, motivations and behavior. It is concerned with the collection and analysis of words, usually speech or writing. The design of any qualitative research study tends to be fairly flexible and loose. Four aspects of qualitative research merit particular care and due diligence. These aspects are the accurate design, sampling strategies, data collection and data analysis (Clissett, 2008). Qualitative research includes the collection, analysis, and interpretation of a type of data that could not be easily turned to numbers. These data relate to the society and the concepts and behaviors of people in such society (Anderson, 2010).

There is a wide difference between qualitative and quantitative methods; generally, qualitative research examines narratives, meanings, and behaviors in social aspects, while quantitative method works with numerical discrete data, analyzing their frequencies and statistical associations (Rich & Ginsburg, 1999). The main difference between qualitative and quantitative methods is the amount of flexibility. In general, qualitative method is flexible to a big extent while quantitative research is somehow inflexible.

Despite the insufficiency of the qualitative research in looking for trends in large groups, qualitative research is a typical approach to clarify how a number of factors such as culture, individual experience, belief or peer influence interact together to guide people's behavior and form their perspectives. Most importantly, qualitative methodology can offer far deeper insight into “how” and “why” phenomena occur than can quantitative methods (Rich et al, 1999).

In this research, the qualitative method was an adequate choice as it allowed the researcher to conduct the study through the survey participants' past experience and analyze their answers and perceptions in a sufficient level of details. It also provided in-depth study and examination of the concept of force majeure and its related issues.

3 . 4 Questionnaire Survey

3 . 4 . 1 Questionnaire Preparation

This study used a questionnaire survey designed to reach the objective of the study to understand the concept of force majeure, the events that may be considered as force majeure and the consequences of the occurrence of such events then and finally, the importance of incorporating a force majeure clause in construction contracts and the ideal format of such clause. The questions were designed to address the objective of the study, as viewed from survey participants who belong to three categories:

contractors, consultants and clients. Respondents were expected to provide different responses to the force majeure principle and its effects on the basis of their different backgrounds.

Appropriate steps were taken to ensure the representation of the data collected by providing questionnaires and receiving responses from numbers of those who are working as consultants, contractors, and clients. Therefore, it can be ascertained that the data collected is representative and does not reflect the responses provided particularly by one of the parties.

Closed-ended questions are used in the questionnaires because they furnish a greater adequacy and consistency in response. Psychological and social sciences are the most suitable fields of application of the closed questions. For first sight, reasons are the most reliability, the “quick-and-cheap” argument, in addition to the possibility to standardize data collection and study comparisons (Friborg & Rosenvinge, 2013). Therefore, closed-ended questions were appropriate for the purpose of the survey.

The questionnaire starts with an introduction explaining to the participants the objective of the survey and the study in addition to its importance. After the introduction, the questionnaire is divided into six sections as follows:

Section 1: deals with participant's personal information such as participant's name, email and educational level.

Section 2: deals with participant's professional background such as participant's experience and category of the current organization and so forth.

Section 3: deals with the principal of force majeure and its application in Egyptian Civil Code.

Section 4: deals with the concept of force majeure in Civil law legal system and similar doctrines in common law legal system.

Section 5: discusses the force majeure clause in construction contracts.

Section 6: raises the issues of force majeure events and their consequences.

3 . 4 . 2 Pretest and Pilot Questionnaires

3 . 4 . 2 . 1 Pretest Questionnaire

Pretesting is an important step to ensure reducing the errors, ambiguities and repetitions in the survey questions. Moreover, it helps to a great extent to improve the quality of the data and increase its accuracy. Pretest questionnaire is often applied on a sample consists of a small number of respondents out of the population intended to be included in the final questionnaire (Grimm, 2010).

A pretest preliminary version of the questionnaire was mailed to three interested professionals who have experience with contracts administration for their review and comments. The pretest questionnaire was reviewed in all aspects then answered by all of them and returned back. The comments were concerning the format of the questionnaire and ambiguity in some questions. Also, some comments were concerning the order of the questionnaire and the logical sequence of questions.

On the basis of the comments, the questionnaire was revised in the pilot questionnaire.

3 . 4 . 2 . 2 Pilot Questionnaire

Comments collected from the pretest questionnaire were integrated into the pilot questionnaire. A pilot survey is an instrument used to test the questionnaire in its entirety using a smaller sample of respondents compared to the planned actual sample size. In this phase of performing the survey, the questionnaire is dealt with by a limited percentage of the total sample population to ensure that it is ready for the final stage (Sincero, 2012).

Conducting a pilot survey prior to the final actual, large-scale survey grants many advantages and benefits for the researcher. First, exploration of the specific issues that could harmfully and adversely affect the survey results. Such issues include adequacy of the questions to the intended applicants. Second, testing the accuracy and the appropriateness of the instructions and directions to be followed by the applicants while answering the questionnaire. Third, it provides a clear vision about whether the structure of the survey and its type are fit for the intended purpose of the survey. Finally, pilot survey is efficient in saving time and cost because if errors are detected in an early stage of the questionnaire, there would be a lesser probability of misleading or unreliable results (Sincero, 2012).

The pilot questionnaire was emailed to three participants, other than those who received the pretest questionnaire, which occupations included contractor, consultant, and client. The participants sent back their useful comments and the questionnaire was revised accordingly. The major benefit of the pilot was identifying practical problems with implementation, rather than problems with the survey design. Such problems were limited to some difficulties with the logistics of distributing and collecting the survey and mistakes in data entry. These problems have already been fixed before performing the final survey

3.4.3 Final Questionnaire

The final format of the actual, large-scale questionnaire was as mentioned in Appendix A to this study. The questionnaire was posted online on the webpage of Google Forms, <https://www.google.com/forms>, and a link to it were emailed to thirty five (35) respondents, out of which twenty five (25) filled in the questionnaire and returned it back. The six professionals who received the pretest and pilot questionnaire were among the twenty five respondents.

It is believed that the twenty five participants represent a suitable sample size that allows getting adequate results for several reasons:

First, the contract administration profession is not a common field. To the contrary, number of professionals working in such field, which represents the total population size, is too much lower than number of professionals working in other fields in construction industry. Therefore, the sample size will never be huge because it is proportional to the total population size.

Second, the quality is more important than the quantity to get accurate results in qualitative research. Hence, the sample size should include those who has a real wide experience in the field, otherwise, the results will be misleading.

Third, the twenty five participants are, in fact, a proper sample space for the survey because they represent a selected group having, as demonstrated in details in the next chapter, the following qualifications:

- The participants include the three main parties of the construction field: the contractor, the consultants and the client.
- They have a varied range of experience generally in construction field and particularly in contract administration.
- They have dealt with contracts that are governed by both civil law and common law systems.
- They worked in several countries worldwide. Some of them currently live in different countries other than Egypt.
- They have experience in different forms of contracts and different project delivery methods. Moreover, a lot of them have experience in administrative contracts.
- The level of education of them ranges from bachelor to doctoral degrees.

3 . 4 . 4 Questionnaire Limitations

The questionnaire is basically based on the participants' experience and opinions. Such opinions are affected by several factors such as:

1- Subjective perception

- a) Language inaccuracy: if the same context is differently interpreted by the participants, a lack of unification in participants' points of view will take place.
- b) Anchoring: takes place when the participant starts with a certain perception then modifies it during answering the questions of the survey.

2- Psychological influences

- a) Bias: If several participants fill in the questionnaire together, managers may influence subordinates.
- b) Personality: the answers of the questionnaire might be affected by the personal tendency of each participant (Rodger & Petch, 1999).
- c) Conformity: the answers of the participants differ depending on whether each of them answers the questionnaire alone or a group of them answer it together.

To avoid the negative effect of the mentioned limitations, it is highly recommended that every participant answers the survey questions independently and gets his own point of view without being affected by others.

3 . 4 . 5 Data Verification

Data validation was performed by the comparison of the respondents' answers through the survey results to the concept of force majeure and its related subjects obtained from the literature review whether in civil law or common law.

CHAPTER 4 : SURVEY ANALYSIS

The questionnaire was sent to thirty five participants and it was completed and returned back by twenty five of them. The following is the analysis of the survey results.

4.1 Respondents' Information

4.1.1 Respondents' Nationality

All the respondents are Egyptians except for one Australian as shown in Table 2 below. The only foreigner respondent belongs to a common law country.

Table 2: *Respondents' Nationality*

Nationality of respondents	No. of respondents	Percentage of respondents
Egyptian	24	96%
Australian	1	4%
Total	25	

4.1.2 Respondents' Current Country of Residence

All the respondents are working in Egypt except for two working in Kingdom of Saudi Arabia and one in UAE. This result is illustrated in Table 3 below.

Table 3: *Respondents' Current Country of Residence*

Respondent Current Country of Residence	No. of respondents	Percentage of respondents
Egyptian	22	88%
KSA	2	8%
UAE	1	4%
Total	25	

4.1.3 Respondents' Bachelor Major

48% of the respondents are civil engineers, while 8% of them are architects and 8% are mechanical engineers. Furthermore, construction management is the Bachelor's major of 36% of the respondents. None of the respondents is an electrical engineer. This result is illustrated in Table 4 below.

Table 4: *Respondents' Bachelor Major*

Bachelor Major	No. of respondents	Percentage of respondents
Civil	12	48%
Architect	2	8%
Electrical	0	0%
Mechanical	2	8%
Construction Management	9	36%
Other	0	0%
Total	25	

4.1.4 Respondents' Graduation Year

As shown in Table 5 and Figure 4 below, 32% of the respondents have graduated between the years of 2011 and 2016, 24% have graduated between the years of 2006 and 2010 and 32% have graduated between the years of 2001 and 2005. Only 8% of the respondents have graduated between the years of 1995 and 2000 and only 4% have graduated before 1995.

Table 5: *Respondents' Graduation Year*

Respondents' Graduation year	No. of respondents	Percentage of respondents
2016-2011	8	32%
2010-2006	6	24%
2005-2001	8	32%
2000-1995	2	8%
Before 1995	1	4%
Total	25	

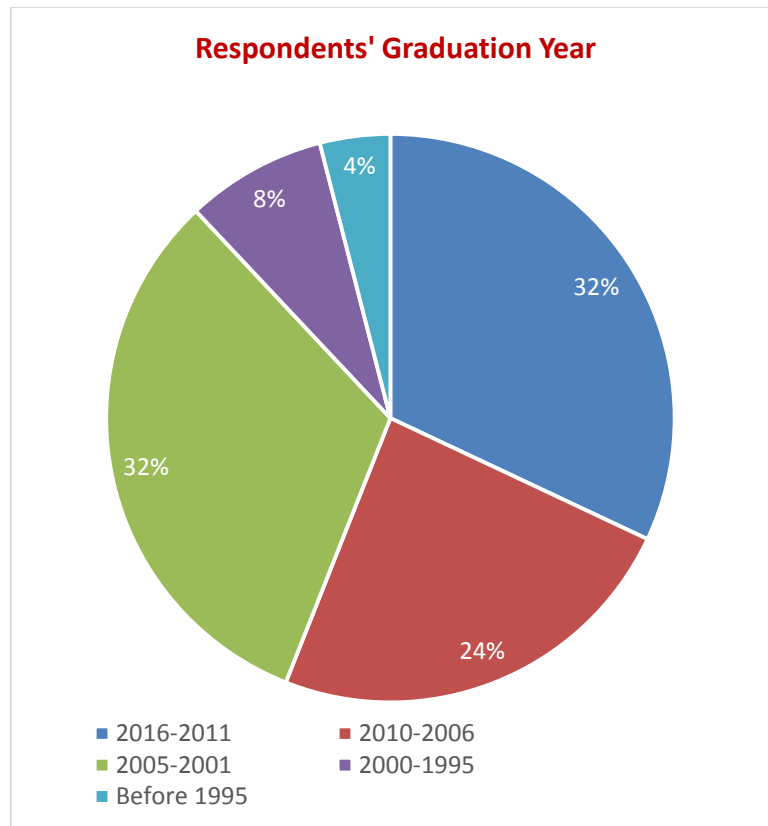


Figure 4: Respondents' Graduation Year

4.1.5 Respondents' Highest Level of Education

60% of the respondents have got the bachelor degree only while 8% of them have got high degree diploma and 28% have got master's degree. Only one of the respondents has got PHD. This result is illustrated in Table 6 and Figure 5 below.

Table 6: Respondents' Highest Level of Education

Highest Level of Education	No. of respondents	Percentage of respondents
Bachelor	15	60%
High Degree Diploma	2	8%
Masters	7	28%
PhD	1	4%
Total	25	

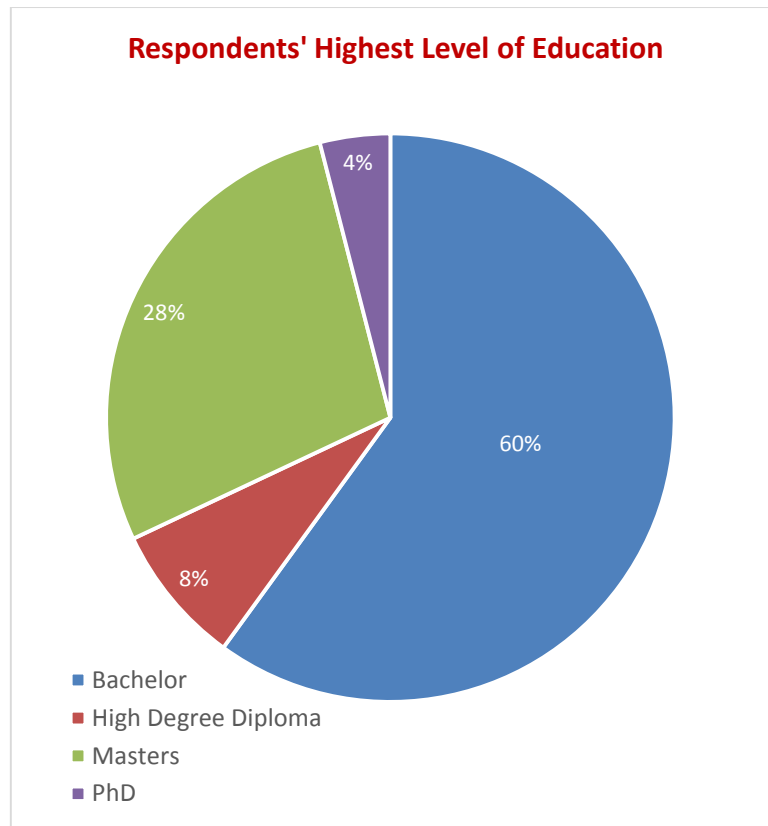


Figure 5: Respondents' Highest Level of Education

4.2 Respondents' Professional Background

4.2.1 Other Countries Where the Respondents Worked in

Six out of the twenty five respondents, representing 24% of them, have worked in countries other than Egypt. Three respondents have worked in both of Kingdom of Saudi Arabia and United Arab Emirates. One has worked in KSA only, one has worked in UAE only and one has worked in several countries: Australia, USA, KSA, UAE and Algeria. It is worth mentioning that the legal system of Saudi Arabia is the Islamic law (Sharia) and the legal system of UAE and Algeria is Civil law while the legal system of USA and Australia is common law. Table 7 shows the countries which the respondents have worked in and number of respondents for each country.

Table 7: *Other Countries where the Respondents Worked in*

Other Countries where the Respondents Worked in	No. of respondents
KSA and UAE	3
KSA	1
UAE	1
Australia, USA, KSA, UAE and Algeria	1
None	19

4.2.2 Category of the Current Organization of the Respondents

Regarding the work domain of the participants, as shown in Table 8 and Figure 6 below, 8% of them are working as a client, 52% are working as a consultant, 32% are working as a contractor and 8% are working in other categories.

Table 8: *Category of the Current Organization of the Respondents*

Category of Current Organization	No. of respondents	Percentage of respondents
Client	2	8%
Consultant	13	52%
Contractor	8	32%
Other	2	8%
Total	25	

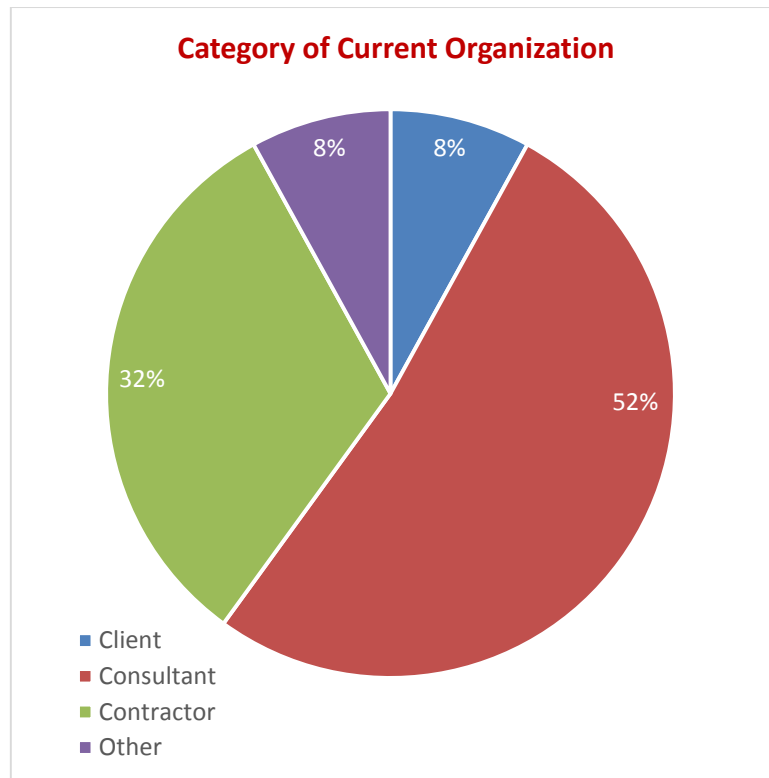


Figure 6: Category of the Current Organization of the Respondents

4.2.3 Respondents' Experience in Construction Industry

Among of the respondents, 28%, have less than 5 year experience in construction industry (representing 7 respondents out of the 25), 24% have experience ranging between 5 and 10 years, 20% of the respondents have experience ranging between 10 and 15 years, 24% have experience ranging between 15 and 20 years and 4% have experience more than 20 years in construction industry. This is illustrated in the Table 9 and figure 7 below.

Table 9: Respondents' Experience in Construction Industry

Experience of respondent in construction Field	No. of respondents	Percentage of respondents
Less than 5 years	7	28%
5 - 10 years	6	24%
10 - 15 years	5	20%
15 - 20 years	6	24%
More than 20 years	1	4%
Total	25	

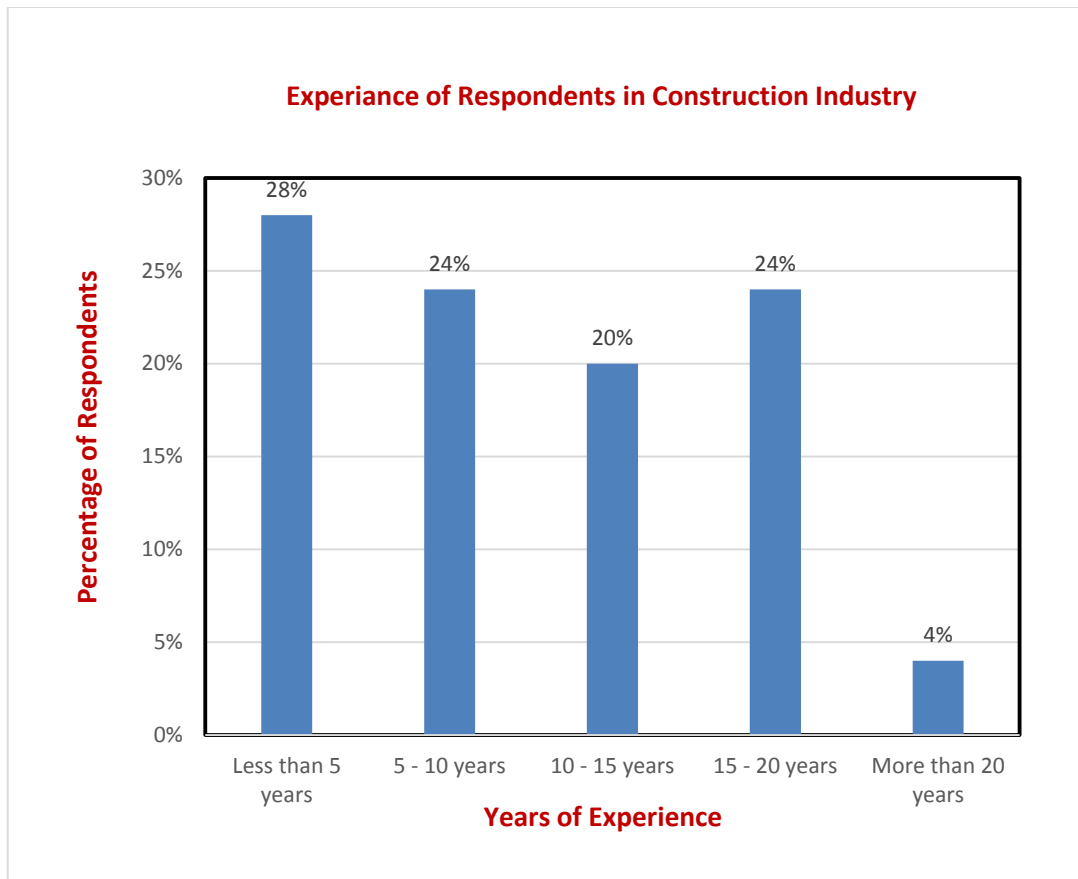


Figure 7: Respondents' Experience in Construction Industry

4.2.4 Respondents' Experience in Contract Administration Field

The respondents have a variety in their experience in contracts administration field. Among of them, 36% have less than 5 year experience in such field, 40% have experience ranging between 5 and 10 years, 16% have experience ranging between 10 and 15 years, 8% have experience ranging between 15 and 20 years and none of them has experience more than 20 years in contract administration field. Table 10 and figure 8 below demonstrate such results.

Table 10: Respondents' Experience in Contract Administration Field

Experience of respondent in Contract Administration Field	No. of respondents	Percentage of respondents
Less than 5 years	9	36%
5 - 10 years	10	40%
10 - 15 years	4	16%
15 - 20 years	2	8%
More than 20 years	0	0%
Total	25	

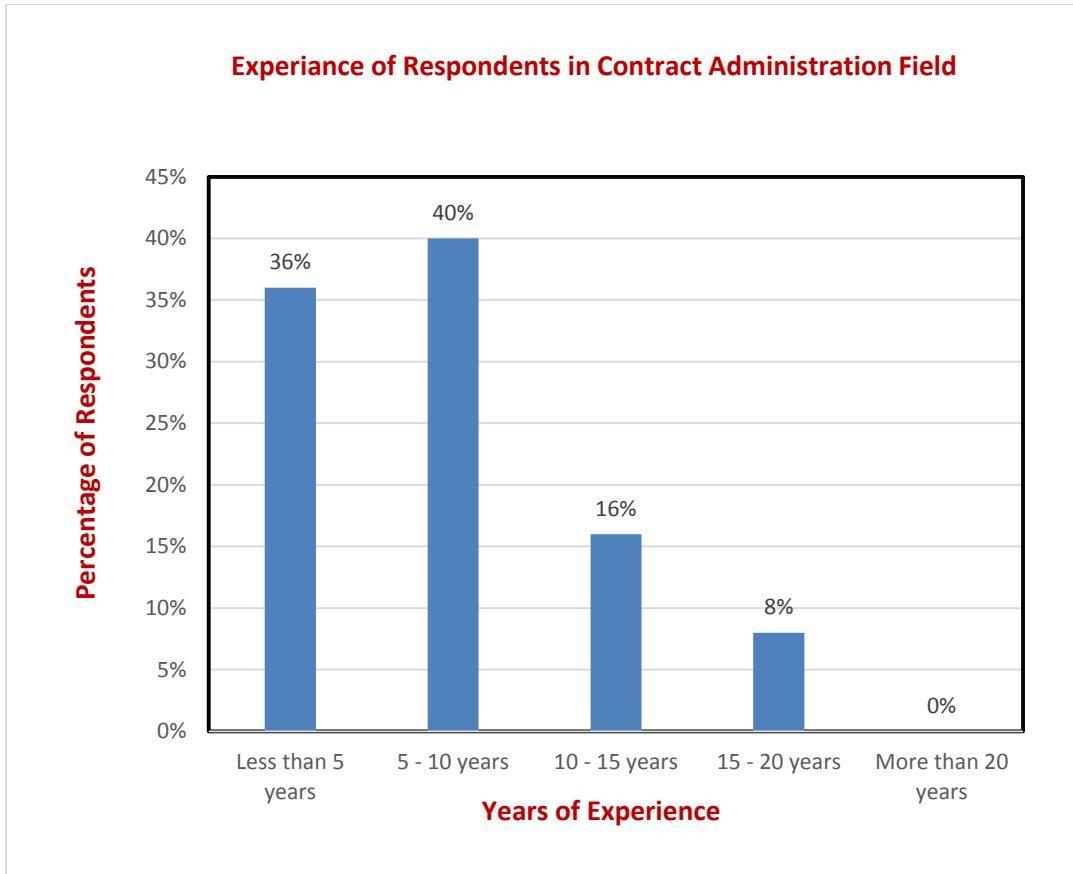


Figure 8: Respondents' Experience in Contract Administration Field

4 . 2 . 5 Forms of Contracts Which the Respondents Have Dealt With

The respondents were asked about the forms of contracts that they have dealt with. Table 11 and Figure 9 show such forms of contracts whether FIDIC based standard form of contracts, other standard forms or tailor made forms. From both of the table and the figure, it is obvious that 52% of the participants have often used the FIDIC form of contracts while the same percentage have sometimes used the tailor made contracts. 24% of the respondents have never used any other standard form of contracts rather than FIDIC. Furthermore, none of the respondents has never dealt with FIDIC contracts and none of them has never dealt with tailor made contracts as well. The results reflect the widespread application of FIDIC contracts in Egypt.

Table 11: *Forms of Contracts which the Respondents Have Dealt With*

Forms of contracts which the respondents have dealt with	Frequency				
	Never	Rarely	Sometimes	Often	Always
Standard forms of contracts, FIDIC based	0	1	4	13	7
Other Standard forms of contracts	6	8	6	4	1
Tailor made contracts.	0	1	13	11	0

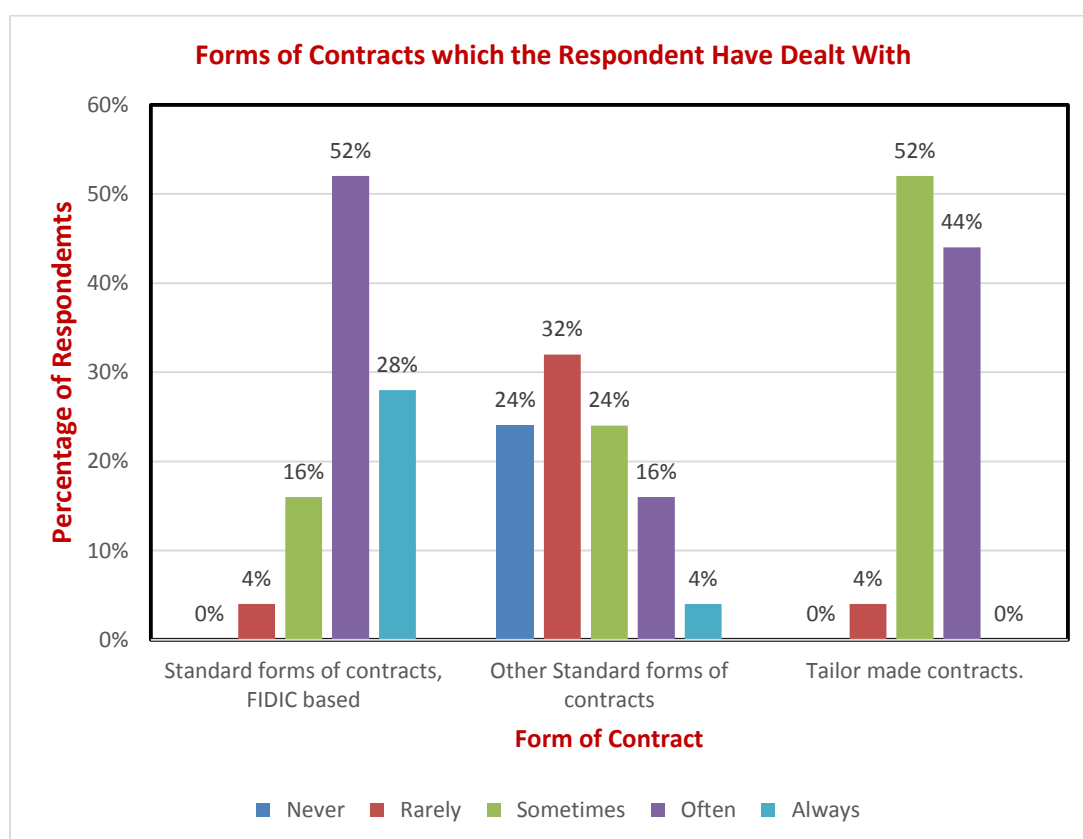


Figure 9: Forms of Contracts which the Respondents Have Dealt With

4.2.6 Types of Contracts Which the Respondents Have Dealt With

Table 12 and Figure 10 below illustrate the types of contracts that the respondents have dealt with, whether private sector contracts or administrative contracts. The table and the figure show that 60% of the respondents have dealt with

private sector contracts in most cases and none of them have never dealt with such type of contracts. On the other hand, almost all of the respondents have dealt with the administrative contracts but with less frequency than the private sector contracts.

Table 12: *Types of Contracts which the Respondents Have Dealt With*

Types of contracts which the respondents have dealt with	Frequency				
	Never	Rarely	Sometimes	Often	Always
Private Sector Contracts	0	0	4	15	6
Administrative Contracts	1	6	10	7	1

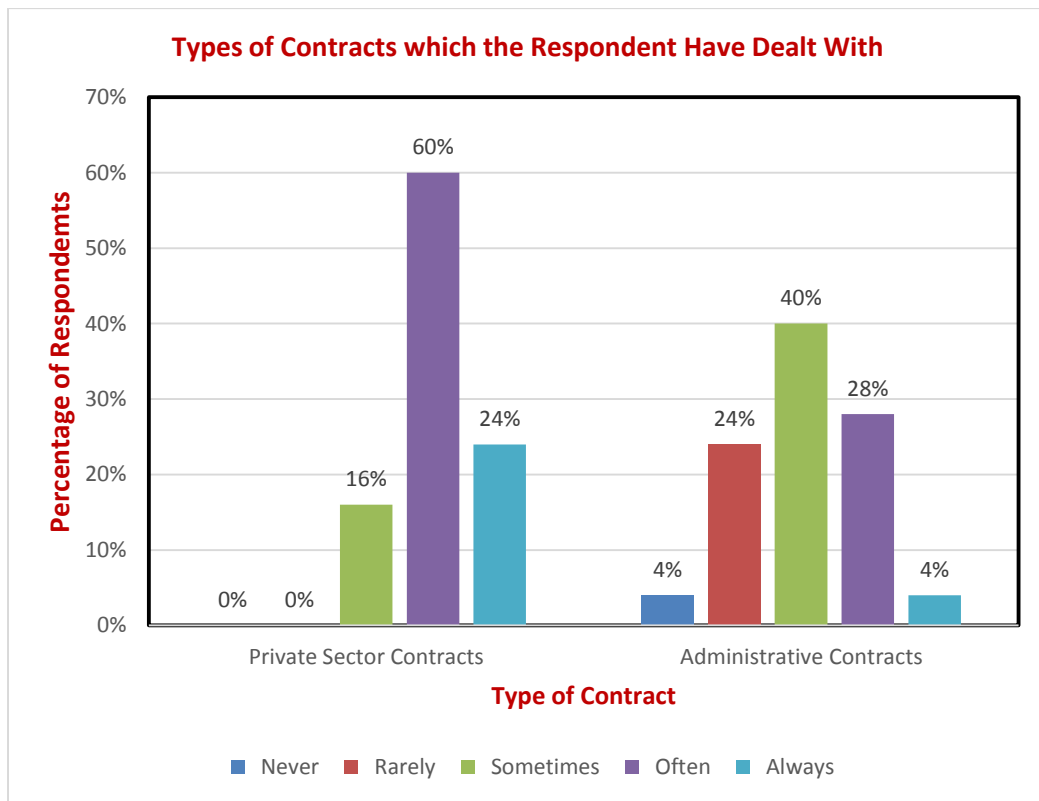


Figure 10: Types of Contracts which the Respondents Have Dealt With

4.2.7 Delivery Method of Projects that the Respondents Worked in

Concerning the delivery method of the projects that the respondents have worked in, it is obvious from Table 13 and Figure 11 below that the Design-Bid-Build is the most frequently delivery method used in the projects as 44% of the respondents

are often dealing with such method. Both of Project Management and Design-Build delivery methods are the second in the ranking of the most frequently used methods as 44% and 40% of the respondents respectively are dealing with in some projects. Construction Management and Separate Prime Contracts are in the following ranking. Lastly, Build-Operate-Transfer and Public-Private-Partnership are rarely used. 76% of the respondents have never dealt with the first and 56% have never dealt with the second.

Table 13: *Delivery Method of Projects that the Respondents dealt with*

Delivery Method of Projects that the respondents dealt with	Frequency				
	Never	Rarely	Sometimes	Often	Always
Design-Bid-Build	2	3	6	11	3
Design-Build (Turnkey)	6	6	10	2	1
Construction Management	6	5	8	4	2
Project Management	6	6	11	2	0
Separate Prime Contracts	9	6	7	3	0
Build-Operate-Transfer	19	5	1	0	0
Public-Private-Partnership	14	11	0	0	0

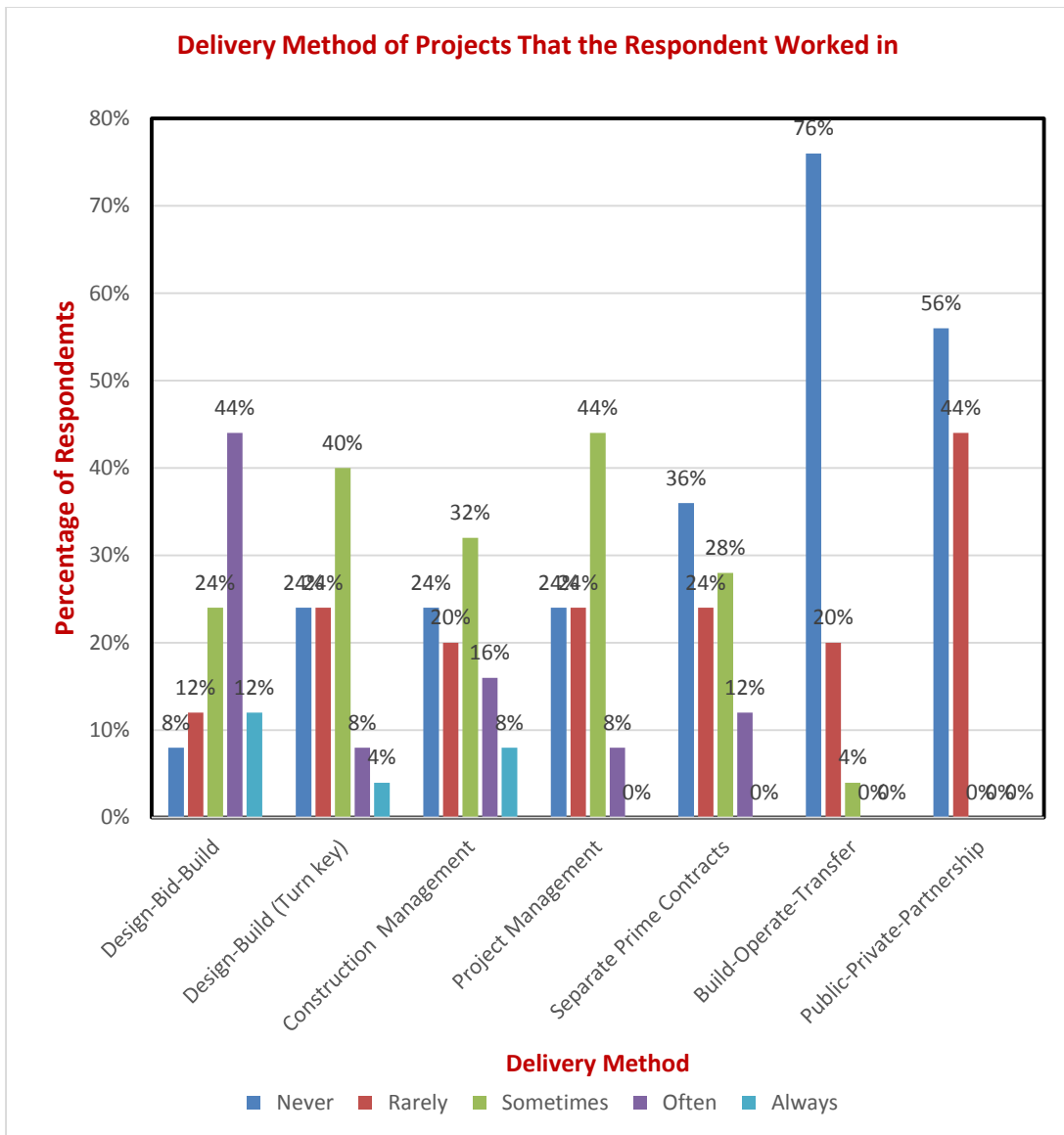


Figure 11: Delivery Method of Projects that the Respondents Worked in

4.2.8 Legal Systems of Contract that the Respondents Have Dealt With

According to Table 14 and Figure 12 below, the civil law is the most popular legal system among the respondents. 52% of them have never dealt with any other legal system. Some respondents have experience in common law contracts but 60% of them have not dealt with. Also, some of the respondents have experience in contracts that are govern by Sharia specially those who

worked in KSA or contributed in projects performed in KSA, but 52% of the respondents still have no experience in such contracts.

Table 14: *Legal Systems of Contracts that the Respondents have dealt with*

Legal System of the contracts that the respondents have dealt with	Frequency				
	Never	Rarely	Sometimes	Often	Always
Civil law system	0	0	4	8	13
Common law system	15	5	5	0	0
Sharia	13	6	6	0	0
Other	19	4	2	0	0

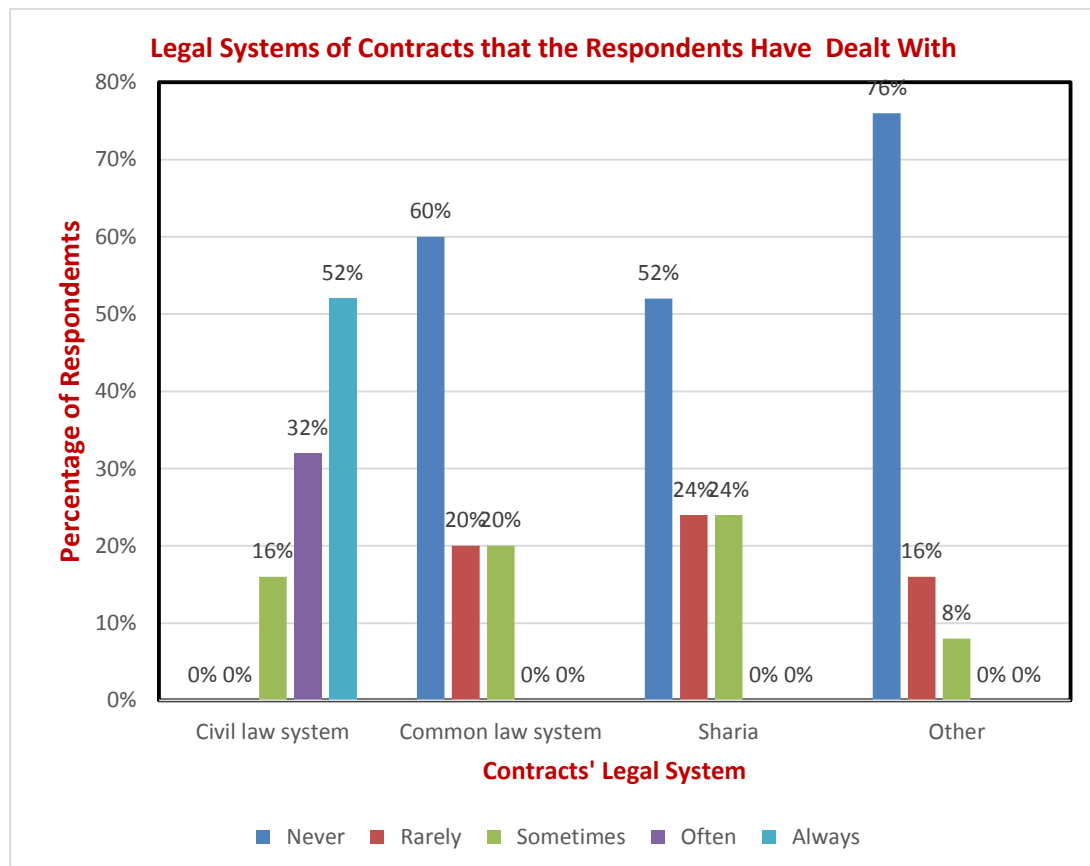


Figure 12: *Legal Systems of Contracts that the Respondents have dealt with*

4.3 Force Majeure Concept

4.3.1 Is Force Majeure Considered a Public Policy Theory

Investigating the opinions of the respondents about whether the principle of force majeure is considered a public policy theory or not, Table 15 and Figure 13 show that 28% of the respondents believe that principle of force majeure is not a public policy theory while 64% believe that it is a public policy theory. Only 8% have undecided opinions on this subject.

Table 15: *Is force majeure considered a public policy theory*

Is force majeure considered a public policy theory	No. of respondents	Percentage of respondents
Strongly disagree	2	8%
Disagree	5	20%
Neither agree nor disagree	2	8%
Agree	12	48%
Strongly agree	4	16%
Total	25	100%

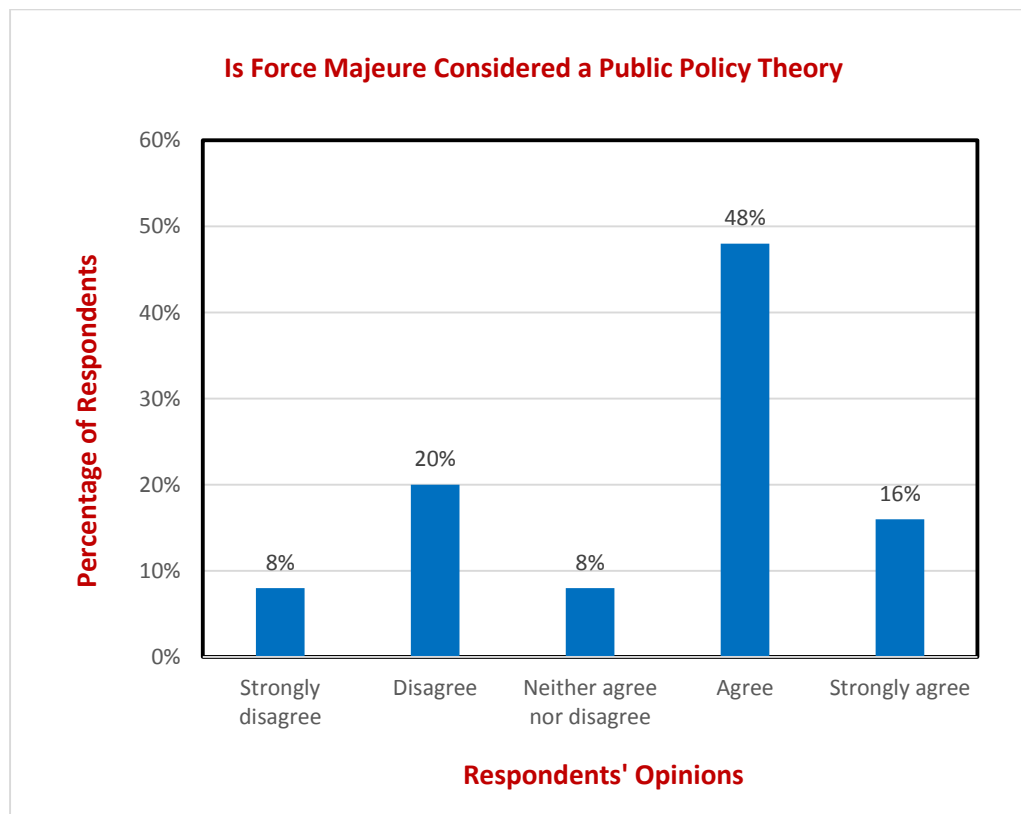


Figure 13: Is Force Majeure considered a Public Policy Theory

4.3.2 Concept of Force Majeure and Theory of Unforeseen Circumstances

Examining the opinions of the respondents about the similarity of the concept of force majeure and the theory of Unforeseen Circumstances in Basis and application in Egyptian Civil code, Table 16 and Figure 14 below show that the majority of them, 84%, see that the two principles are different while only 8% see that they are similar. Only 8% have undecided opinions on this subject.

Table 16: *Concept of force majeure and theory of unforeseen circumstances*

concept of force majeure and the theory of unforeseen circumstances are different in basis and application	No. of respondents	Percentage of respondents
Strongly disagree	0	0%
Disagree	2	8%
Neither agree nor disagree	2	8%
Agree	13	52%
Strongly agree	8	32%
Total	25	100%

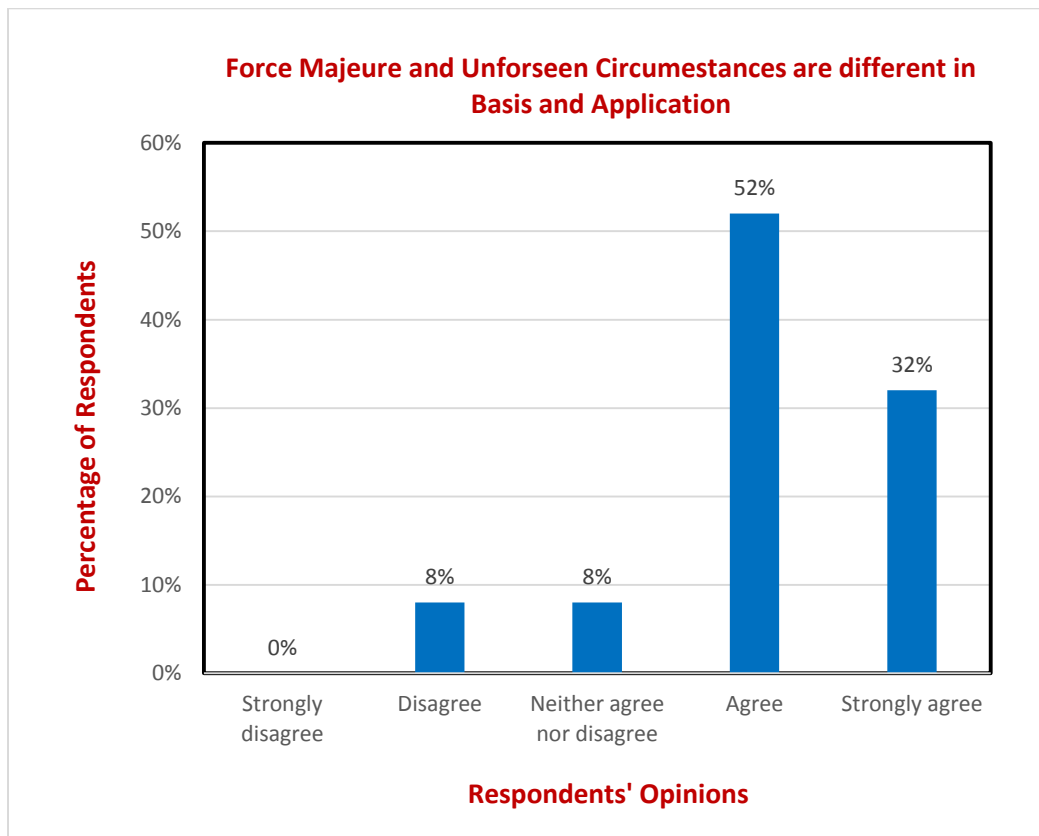


Figure 14: Concept of force majeure and theory of unforeseen circumstances

4.3.3 Characteristics of Force Majeure and Unforeseen Circumstances

Table 17 and Figure 15 illustrate the opinions of the respondents about the characteristics of the concept of force majeure and those of to the theory of Unforeseen Circumstances in accordance to Egyptian Civil code. The majority of the respondents, 56%, have the opinion that the events in both principles are unpredictable and beyond the control of the contract parties. The same if the debtor was not able to prevent or avoid the event as per the opinion of 44% of the respondents.

64% of the respondents believe that if the event results in impossibility of performance then it is classified as force majeure event. The same percentage of the respondents have the same opinion for events leading to contract termination. On the other hand, 68% of the respondent have the opinion that if the event results in excessively onerous obligations, then it is considered as unforeseen circumstance. The same if the obligations are adjusted as a result of the event occurrence as 60% of the respondents believe and if the event leads to restoring the economic equilibrium of the contract by the judge as 76% believe. 36% of the respondent consider any agreement in contrary to what is stated in the law regarding the unforeseen circumstances is void.

Table 17: *Distinguishing Between Force Majeure and Unforeseen Circumstances*

Characteristics	The Principle			
	Concept of force majeure	Theory of unforeseen circumstances	Both of them	None of them
Causes beyond parties control	11	0	14	0
Unpredictable events	2	9	14	0
The event resulted in impossibility of performance	16	5	3	1

The event resulted in excessively onerous obligations	4	17	2	2
The contract is rescinded as a result of the event occurrence	16	2	4	3
The obligations are adjusted as a result of the event occurrence	2	15	5	3
Restoring the economic equilibrium of the contract	2	19	4	0
The debtor was not able to prevent or avoid the event	10	2	11	2
Any agreement in contrary is void	5	9	3	8

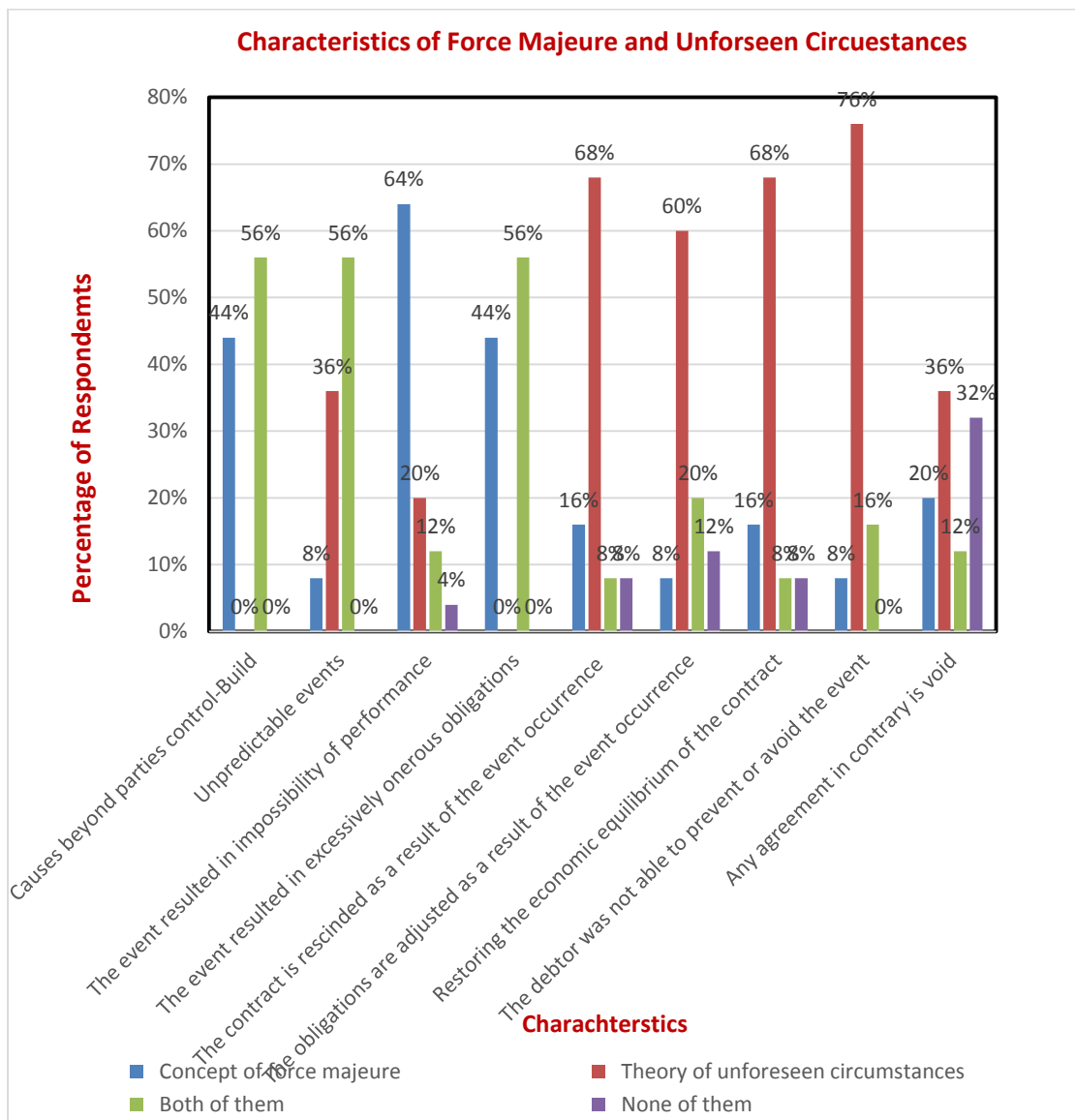


Figure 15: Distinguishing Between Force Majeure and Unforeseen Circumstances

4.4 Force Majeure in Civil Law and Common Law Legal Systems

4.4.1 Contract Parties Liability in Common Law and Civil Law system

The respondents were asked to give their opinions about whether the common law system apply a stricter liability on contract parties than the Civil Law or not.

Referring to Table 18 and Figure 16 below, 52% of the respondents, representing their majority, agree with the statement while 12% only disagree. It is noted also that 36% have undecided opinions.

Table 18: *Contract Parties Liability in Common Law and Civil Law systems*

The liability of Contract Parties in Common Law system and Civil Law system	No. of respondents	Percentage of respondents
Strongly disagree	1	4%
Disagree	2	8%
Neither agree nor disagree	9	36%
Agree	9	36%
Strongly agree	4	16%
Total	25	100%

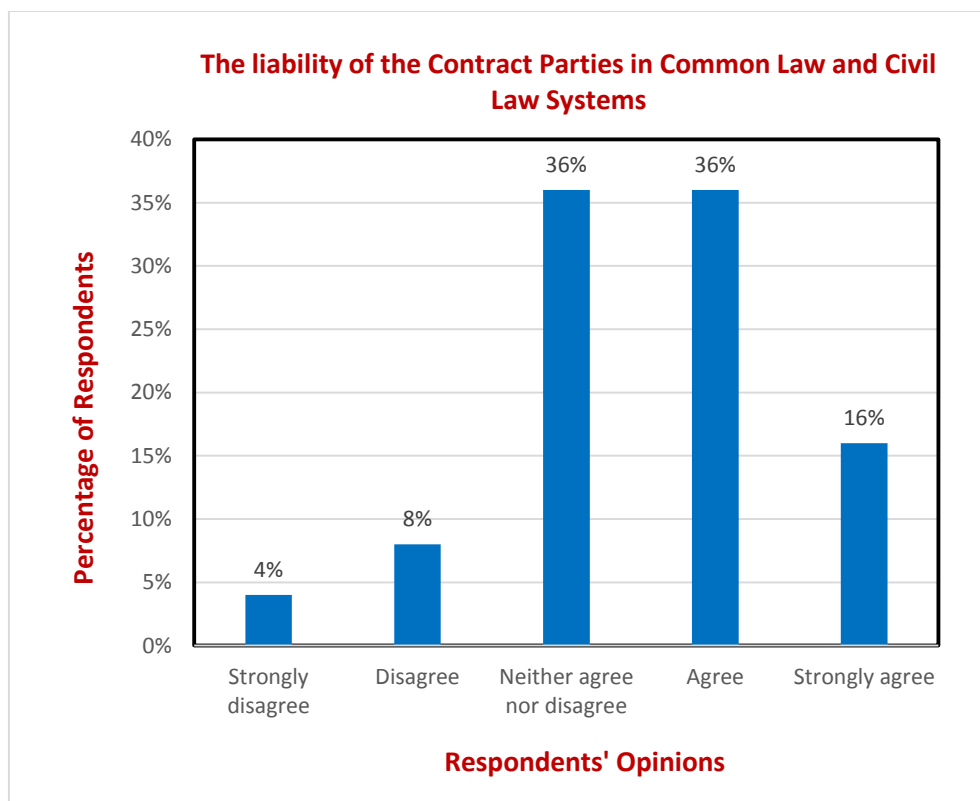


Figure 16: Contract Parties Liability in Common Law and Civil Law systems

4.4.2 Which legal System is considered a "No-Fault Liability" System

According to a majority of 56% of the respondents' opinion, the common law is considered a "No-Fault Liability" System while 8% only considered that it is a characteristic for the civil law. Furthermore, 20% have the opinion that both legal systems are "No-Fault Liability" system and 16% believe that both of them are not so. This result is shown in Table 19 and Figure 17.

Table 19: "No-Fault Liability" System

"No-Fault Liability" System	No. of respondents	Percentage of respondents
Civil Law legal System	2	8%
Common Law legal System	14	56%
Both of them	5	20%
None of them	4	16%
Total	25	100%

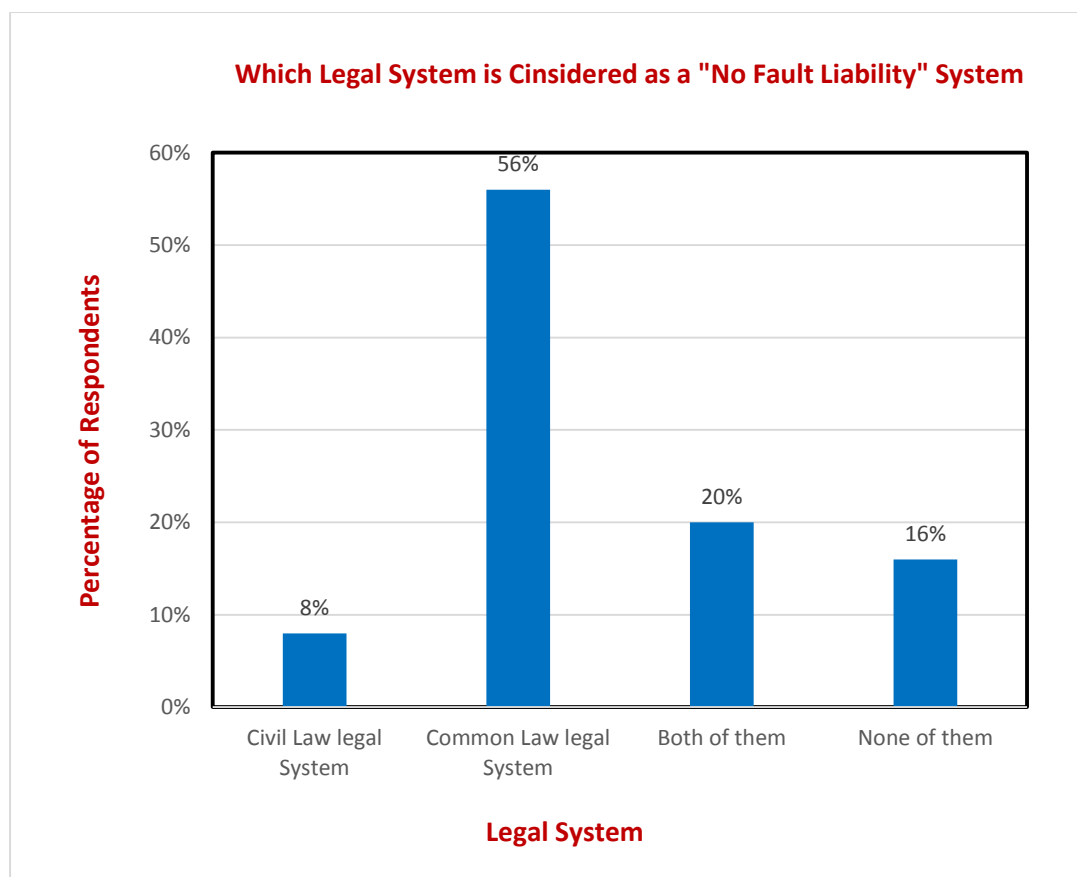


Figure 17: "No-Fault Liability" System

4.4.3 Urgency of Inclusion of a Force Majeure Clause in the Contract

Referring to Table 20 and Figure 18, eleven of the respondents, represent 44%, believe that it is an urgent need for the debtor to have a force majeure clause in the contract if it is subject to common law legal system. Only three respondents, represent 12%, believe that such clause is urgently needed for the contracts governed by civil law legal system, while 36% believe that the clause is vital for both legal systems and 8% believe that it is not important for any of them.

Table 20: *Urgency of Inclusion of a Force Majeure Clause in the Contract*

Legal System	No. of respondents	Percentage of respondents
Civil Law legal System	3	12%
Common Law legal System	11	44%
Both of them	9	36%
None of them	2	8%
Total	25	100%

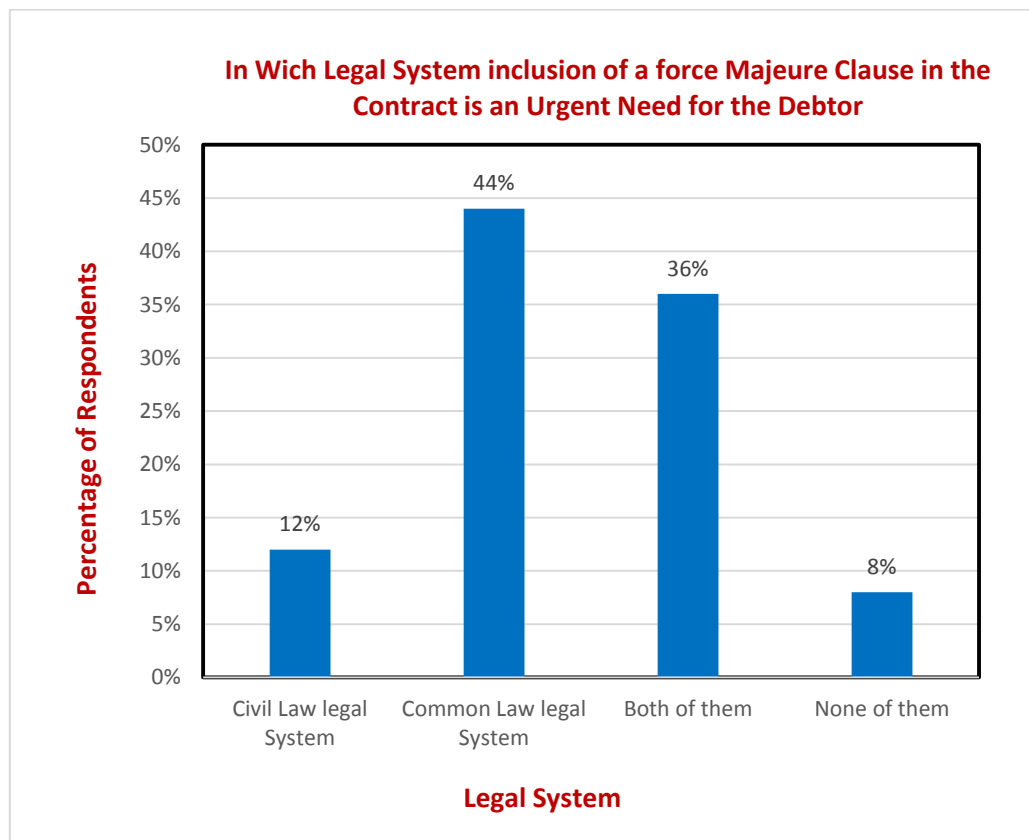


Figure 18: Urgency of Inclusion of a Force Majeure Clause in the Contract

4.4.4 Common Law Doctrines and Concept of Force Majeure

The respondents' opinion were investigated about the similarity of the mentioned common law doctrines and the concept of force majeure. According to Table 21 and Figure 19 below, 44% of the respondents think that all the mentioned doctrines are similar to force majeure concept while only 12% of them think that none of the doctrines is similar. Others believe that only a certain doctrine is similar.

Table 21: *Common Law Doctrines and Concept of Force Majeure*

Common Law Doctrine	No. of respondents	Percentage of respondents
Physical impossibility	3	12%
Frustration of Contract	6	24%
Commercial impracticability	0	0%
Hardship	2	8%
All of them	11	44%
None of them	3	12%
Total	25	100%

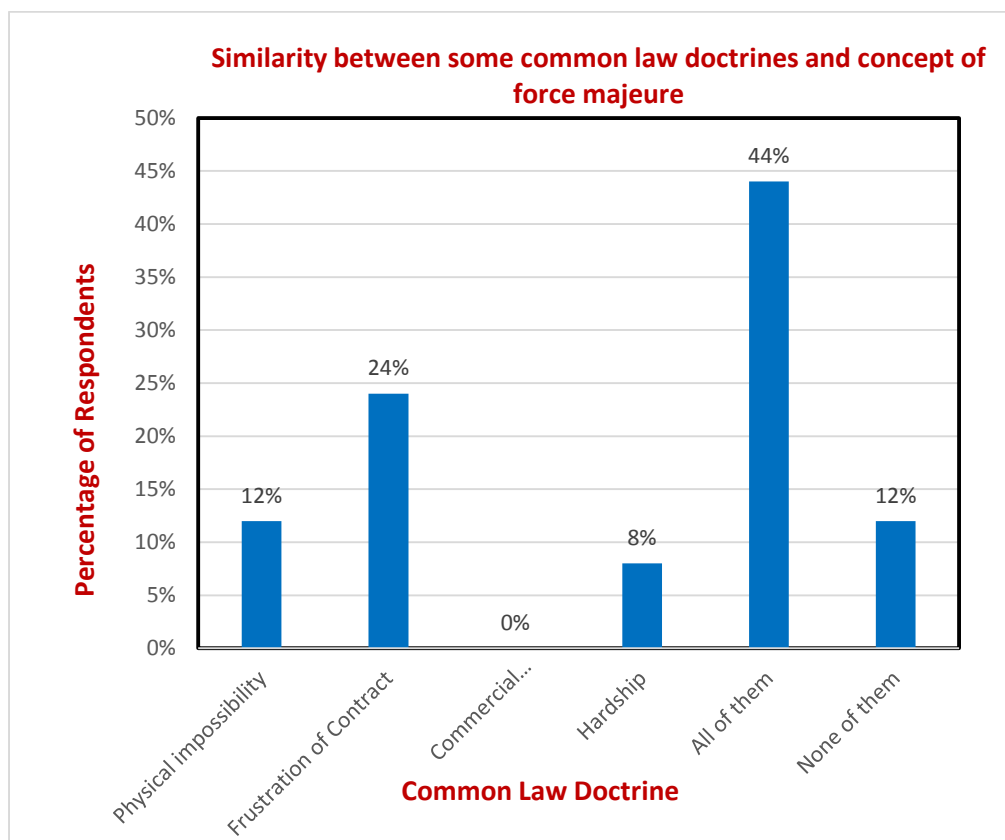


Figure 19: Common Law Doctrines and Concept of Force Majeure

4 . 5 Force Majeure Clause in Construction Contracts

4 . 5 . 1 Aims of incorporating a force majeure clause in Contracts

Table 22 and Figure 20 below illustrate respondents' opinions regarding the aims achieved by incorporating a force majeure clause in the construction contract. The table and the figure show that 64% of the respondents believe that risk allocation is an aim of force majeure clause. In addition, 68% believe that establishment of different remedies for different events, notifying the contract parties of event occurrence and exonerating a contract party from the consequences of failure to perform its obligations are another aims. Also, 52% of the respondents believe that intercept the harmful effects of unforeseen contingencies and parties agreement on the effect that such force majeure events are also aims of the clause. Furthermore, 72% believe that another aim is to allow parties to list the events that would be significant enough to them to warrant a change in one or both parties' obligation. Finally, 48% believe that incorporating the force majeure clause aims to establish less drastic remedies of force majeure events rather than full discharge under frustration doctrine in common law, such as suspension of obligations.

Very few respondents have different view regarding such aims. Moreover few of them have not decided whether the elements of the mentioned list constitutes the aims of the force majeure clause or not.

Table 22: *Aims of Incorporating a Force Majeure Clause in Contracts*

Event	Respondents' Opinions				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Risk allocation	2	3	4	10	6
Establishment of different remedies for different events	1	4	3	12	5
Intercept the harmful effects of unforeseen contingencies	1	6	5	11	2
Notifying the parties of events that may suspend or excuse performance	2	3	3	13	4
Exonerating a party to a contract from the consequences of failure to perform its obligations caused by supervening events	1	3	4	12	5
Allowing parties to list those events that would be significant enough to them to warrant a change in one or both parties' obligations	1	4	2	15	3
Parties may agree on the effect that such events would have on a party's obligation	1	6	5	11	2
Less drastic remedies than full discharge under frustration doctrine in common law, such as suspension of obligations, can be agreed to in advance	0	6	7	11	1

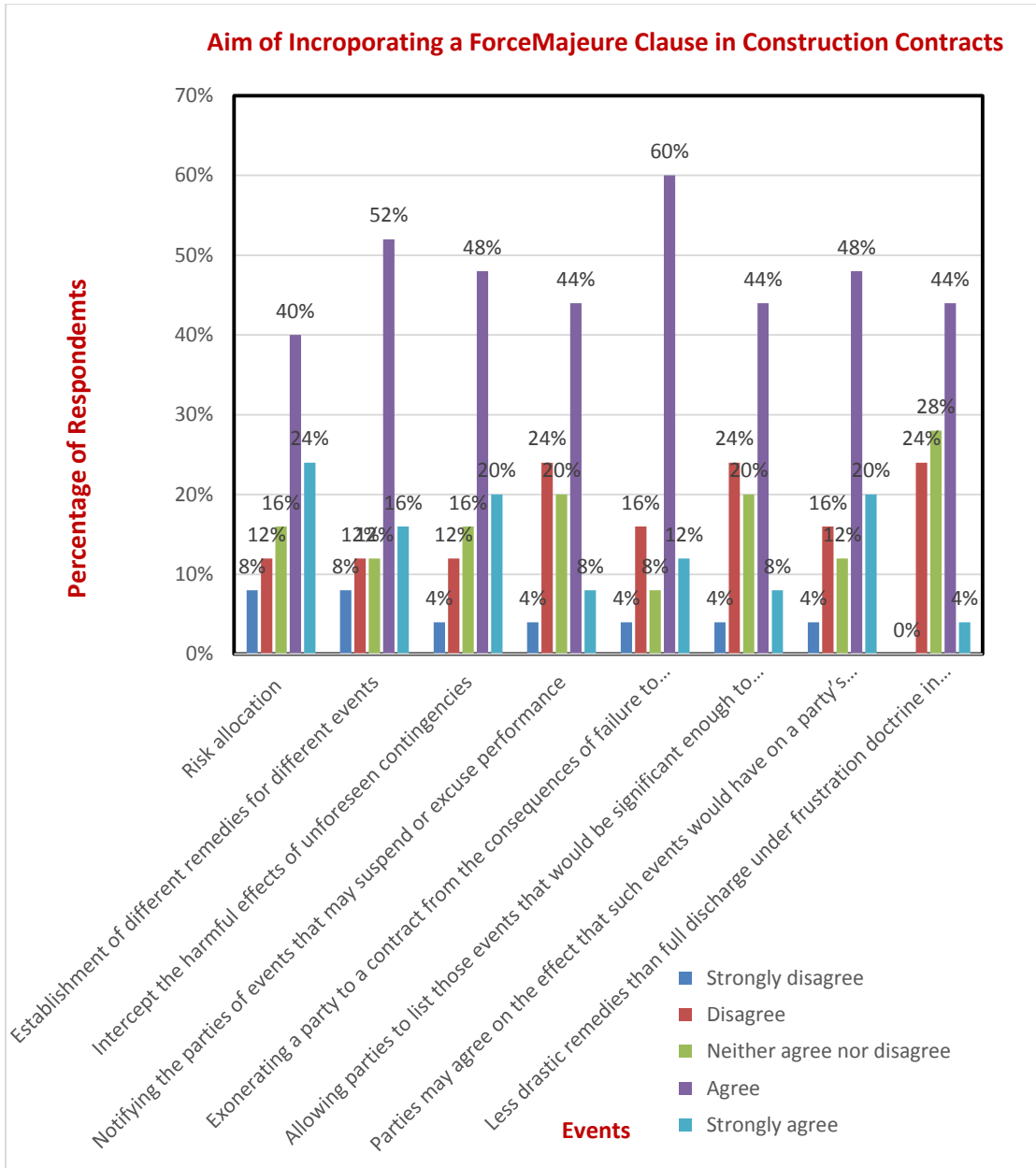


Figure 20: Aims of Incorporating a Force Majeure Clause in Contracts

4.5.2 Parties Obligations upon Occurrence of a Force Majeure Event

The respondents were asked about what they believe it is an obligation to the contract's parties upon occurrence of force majeure events. Table 23 and Figure 21 illustrates respondents' opinions regarding obligation of parties. The table and the figure show that 80% of the respondents think that notifying the other contract's party of the occurrence of the event is an obligation of non-affected parties. A close percentage, 76%, of respondents, think that using good faith efforts to mitigate the impact of the

event is an obligation. Few respondents have opposing opinions regarding the two obligations.

Table 23: *Parties Obligations upon Occurrence of Force Majeure Events*

Event	Respondents' Opinions				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Notifying the other party of the occurrence of the event	3	2	0	8	12
Using good faith efforts to mitigate the impact of the event	2	1	3	7	12

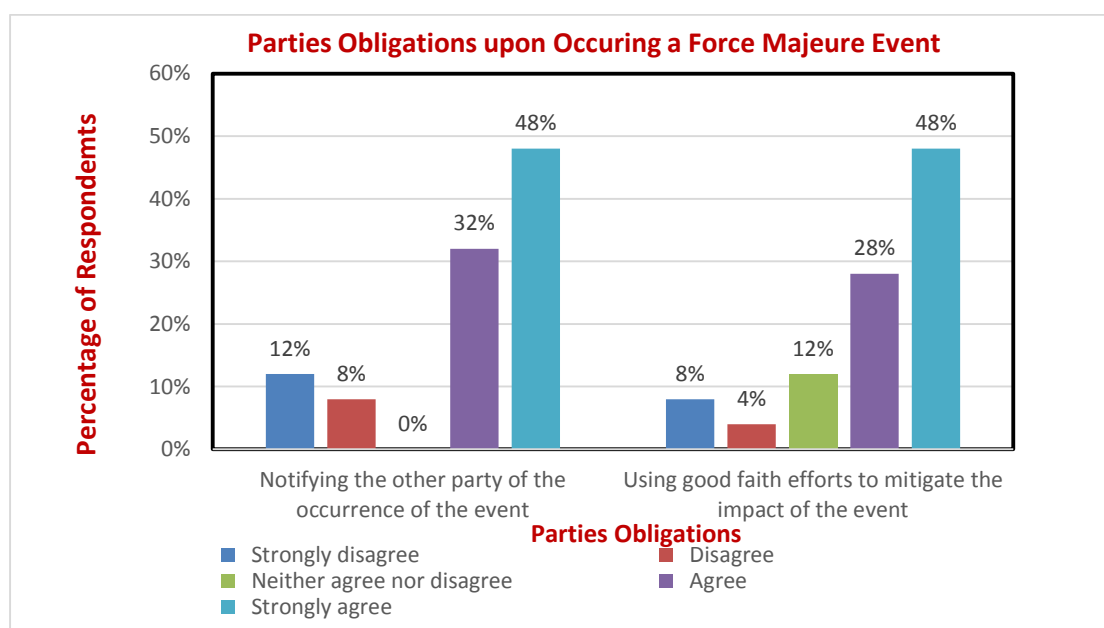


Figure 21: Parties Obligation upon Occurrence of Force Majeure Events

4.5.3 Force Majeure in FIDIC and Both Civil Law and Common Law

Table 24 and Figure 22 below illustrates respondents' opinions regarding the similarity in dealing with force majeure in FIDIC contracts and in both civil law and common law systems. The table and the figure show that 48% of the respondents believe in similarity of FIDIC and civil law in dealing with force majeure, while 16%

only believe in similarity of FIDIC and common law. On the other hand, 40% of the respondents disagree that the FIDIC and civil law are similar in dealing with force majeure and 48% disagree the similarity of FIDIC and common law.

Table 24: *Similarity in dealing with force majeure in FIDIC and both civil law and common law*

Event	Respondents' Opinions				
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Dealing with force majeure in civil law legal system	2	8	3	11	1
Dealing with equivalent doctrines in common law legal system	1	11	9	4	0

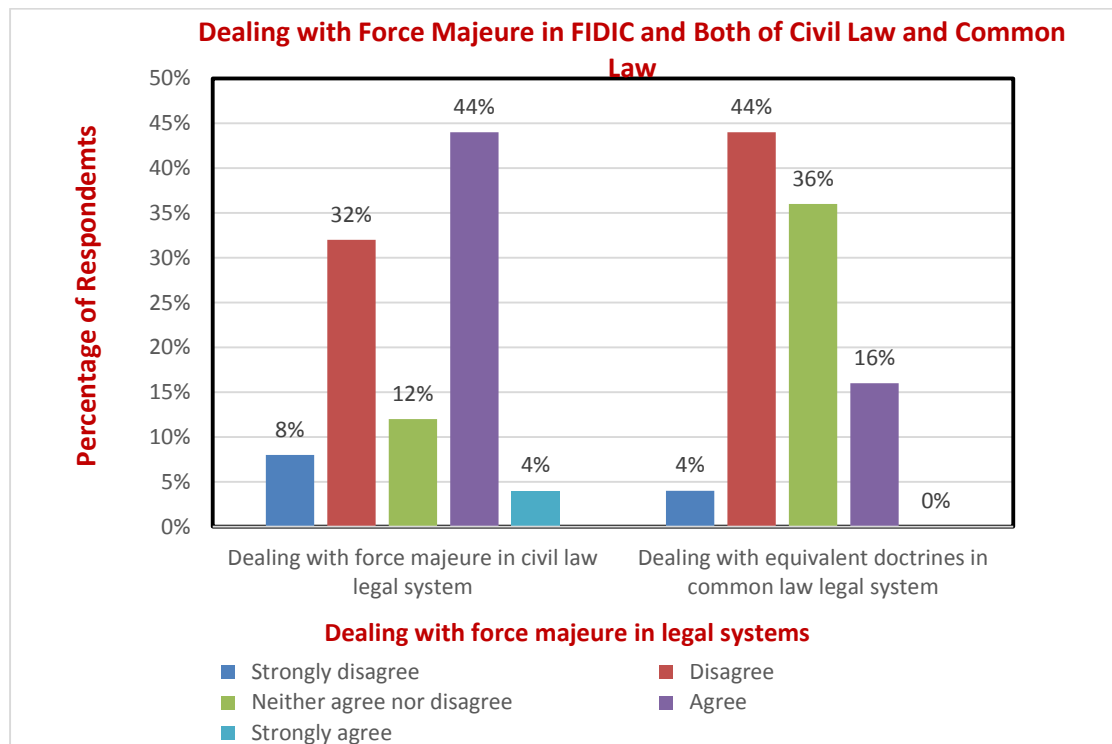


Figure 22: force majeure in FIDIC contracts and both civil law and common law

4.5.4 Period of Optional Termination

Respondents' opinions were investigated regarding the appropriate period of optional termination in case of prolonged suspension of work due to force majeure

event. Table 25 and Figure 23 below indicate that 28% of the respondents consider a period of 91-120 days is the optimum period for optional termination, while 24% prefer the period of 61-90 days, 16% prefer the period of 31-60 days, 12% prefer the period of 150-180 days, 8% prefer the period of 121-150 days, 4% prefer the period of more than 180 days and 8% prefer another periods. None of the respondents considered the period of 30 days.

Table 25: *Period of Optional terminated*

Period	No. of respondents	Percentage of respondents
30 days	0	0%
31 - 60 days	4	16%
61 - 90 days	6	24%
91 - 120 days	7	28%
121 - 150 days	2	8%
150 - 180 days	3	12%
More than 180 days	1	4%
other	2	8%
Total	25	

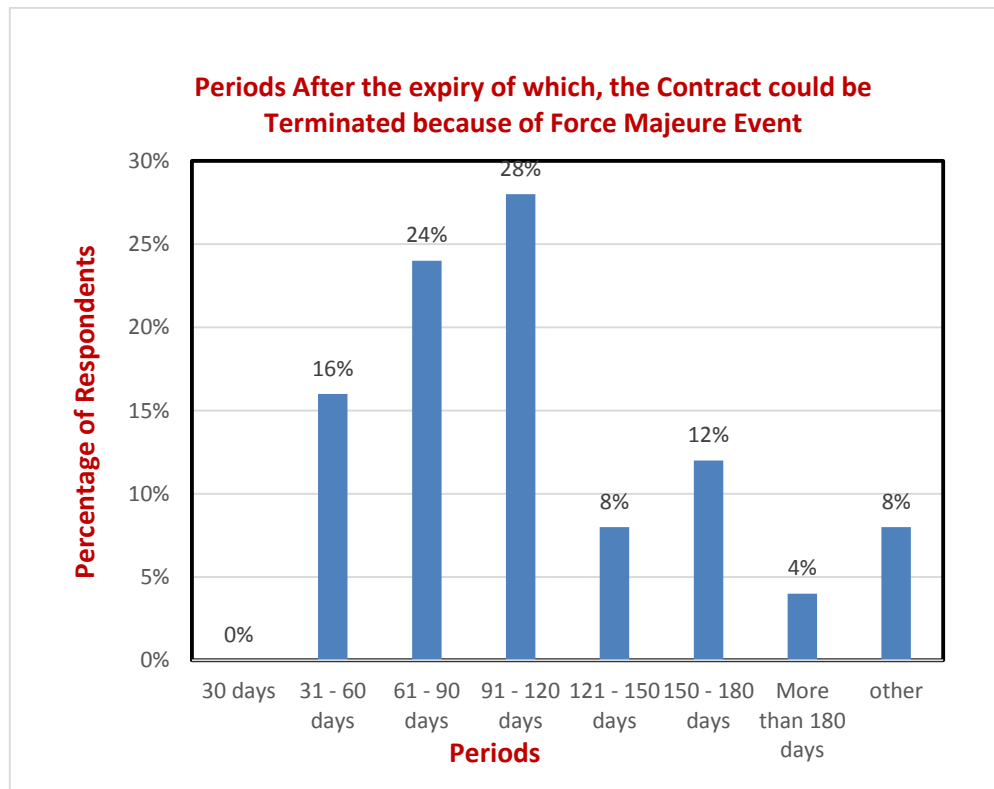


Figure 23: Period of Optional Terminated

4.6 Force Majeure Events and Consequences

4.6.1 Frequency of Occurrence of Force Majeure Events

The respondents were asked about the frequency of occurrence of force majeure events during their past experience. Referring to Table 26 and Figure 24 below, 60% of the respondents rarely faced force majeure events in their past experience while 28% faced such events in some contracts and 12% mentioned that no force majeure event took place in the contracts they have performed.

Table 26: *Frequency of Occurrence of Force Majeure Events*

Occurrence of force majeure events during executing Contracts	Frequency				
	Never	Rarely	Sometimes	Often	Always
	3	15	7	0	0

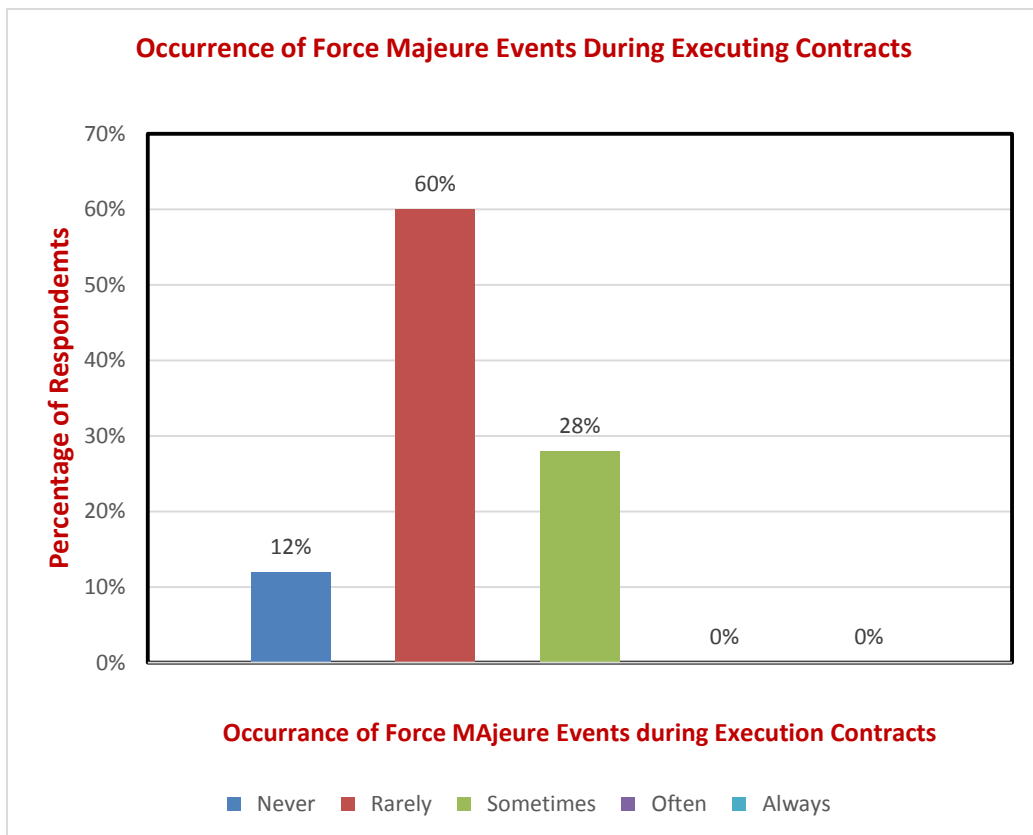


Figure 24: Occurrence of force majeure events during executing Contracts

4.6.2 Frequency of occurrence of different force majeure events

Table 27 and Figure 25 below illustrates the events of force majeure that the respondents have faced during their past experience. The table and the figure show that the most frequent events of force majeure are the Commotion, disorder and strikes. 40% of the respondents have faced such events in some of the projects. Rebellion, revolution and civil war are events of force majeure that 36% of the respondents faced in their projects. Some of force majeure events are rarely occurred such as earthquakes, drought, tidal waves and floods and some other events have almost never been happened in the past history of the respondents such as Contamination by radio-activity.

Table 27: *Frequency of Occurrence of Force Majeure Events*

Force Majeure Event	Frequency				
	Never	Rarely	Sometimes	Often	Always
Act of God (fires, explosions, earthquakes, drought, tidal waves and floods);	16	8	1	0	0
War, hostilities or act of foreign enemies	16	6	2	1	0
Rebellion, revolution, , or civil war	3	11	9	2	0
Commotion, disorder or strikes	8	5	10	1	1
Contamination by radio-activity from any nuclear fuel	23	1	1	0	0
Acts or threats of terrorism	13	7	5	0	0
Legal prohibition	15	8	2	0	0

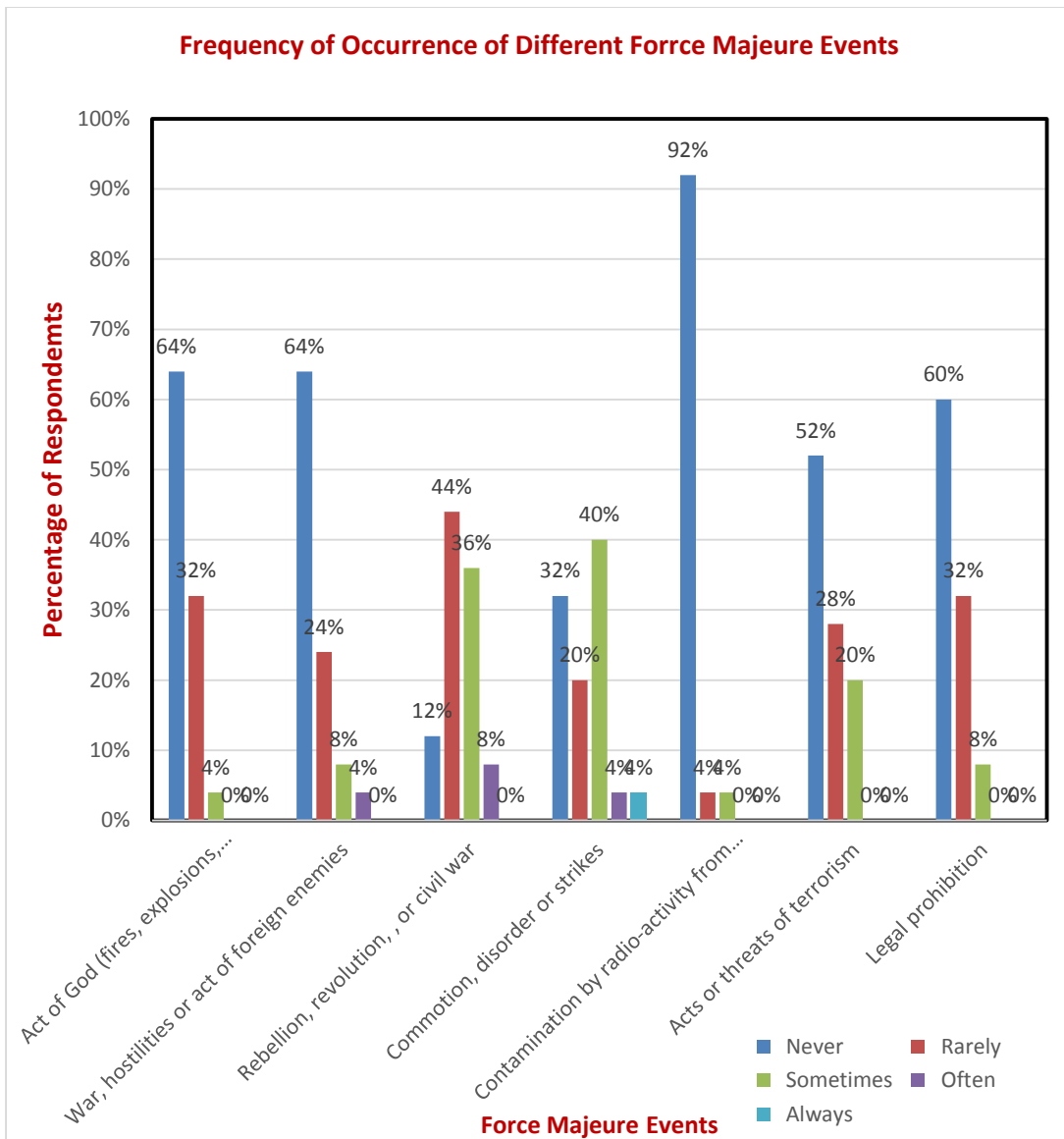


Figure 25: Frequency of occurrence of Different Force Majeure Events

4.6.3 Consequences of Force Majeure Events

The respondents were asked about the consequences of force majeure events that have taken place in their past experience. Table 28 and Figure 26 show that most of the consequences of the force majeure events are the full Suspension of work at site according to 36% of the respondents and partial suspension of work according to 44% of the respondents and prevention of performing a small part of the work at site according to 36% of the respondents. Termination of the contract is a rare consequence of force majeure according to 60% of the respondents.

Table 28: *Consequences of Force Majeure Events*

Consequences of Force Majeure Events	Frequency				
	Never	Rarely	Sometimes	Often	Always
Termination of contract	15	5	5	0	0
Full Suspension of work at site	5	6	9	5	0
Partial suspension of work at site	2	6	11	5	1
Prevention of performing a small part of work at site	6	6	9	2	2
Other	12	8	5	0	0

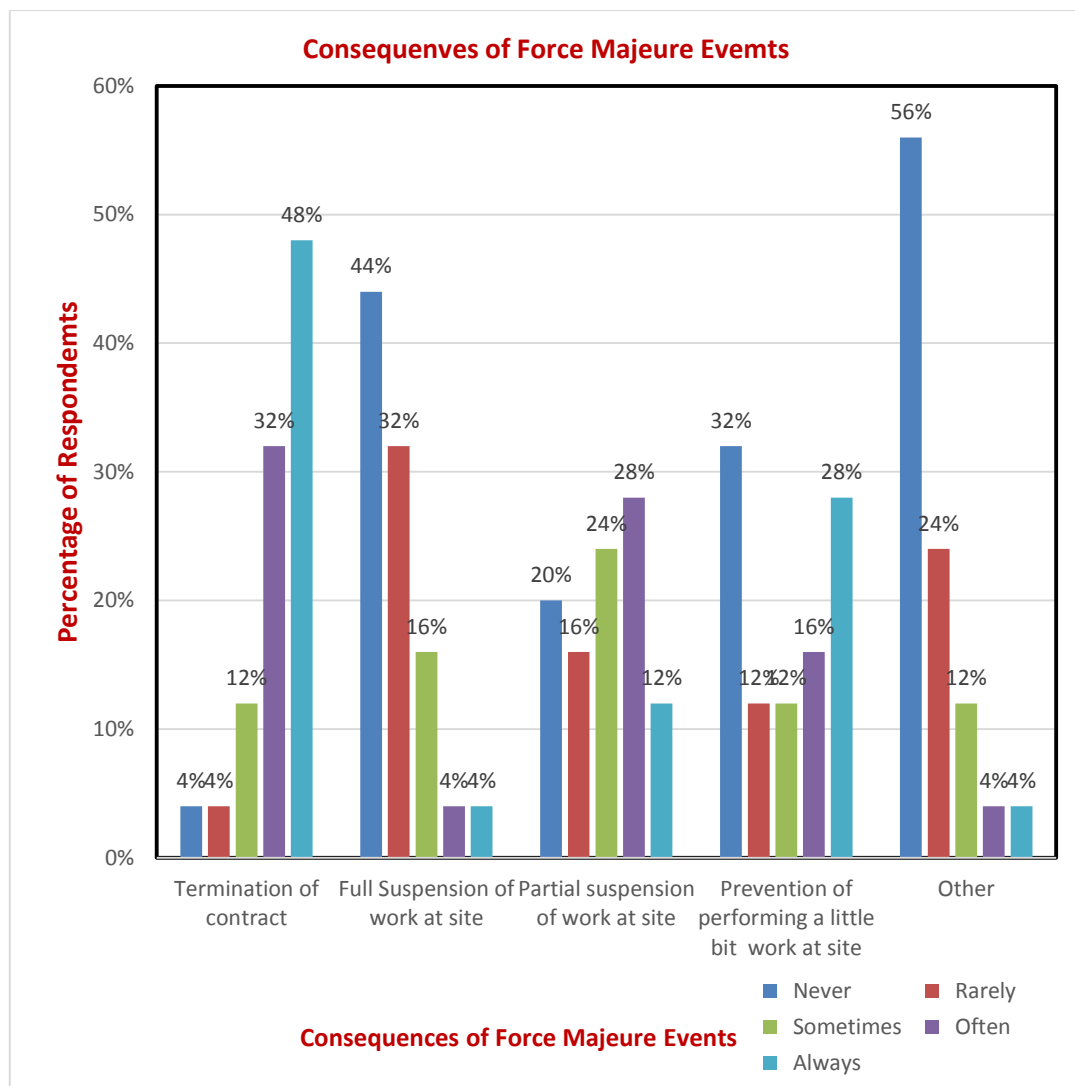


Figure 26: Consequences of Force Majeure Events

4.6.4 Contractor's Compensation due to force majeure event

Respondents were asked about the remedies that the contractor was entitled to as a result of occurrence of force majeure events. Referring to Table 29 and Figure 27 below, the extension of time is the most frequent compensation as 44% of the respondents assign a high likelihood of granting an extension of project time as a result of force majeure events. Cost compensation took place sometimes and both time extension and cost compensation together sometimes represent the contractor's remedy. It was not clear through the responses whether the cost compensation is due to the effect of force majeure event itself or due to the mitigation actions that the contractor has taken to avoid the harmful effect of the event. According to 68%, it was never happened that the contractor was neither granted an extension of time nor cost compensation.

Table 29: Contractor's Compensation due to Force Majeure

Contractor's Remedy	Frequency				
	Never	Rarely	Sometimes	Often	Always
Extension of time	2	2	3	11	7
Cost compensation	5	9	9	1	1
Both of them	6	6	9	4	0
None of them	17	6	2	0	0

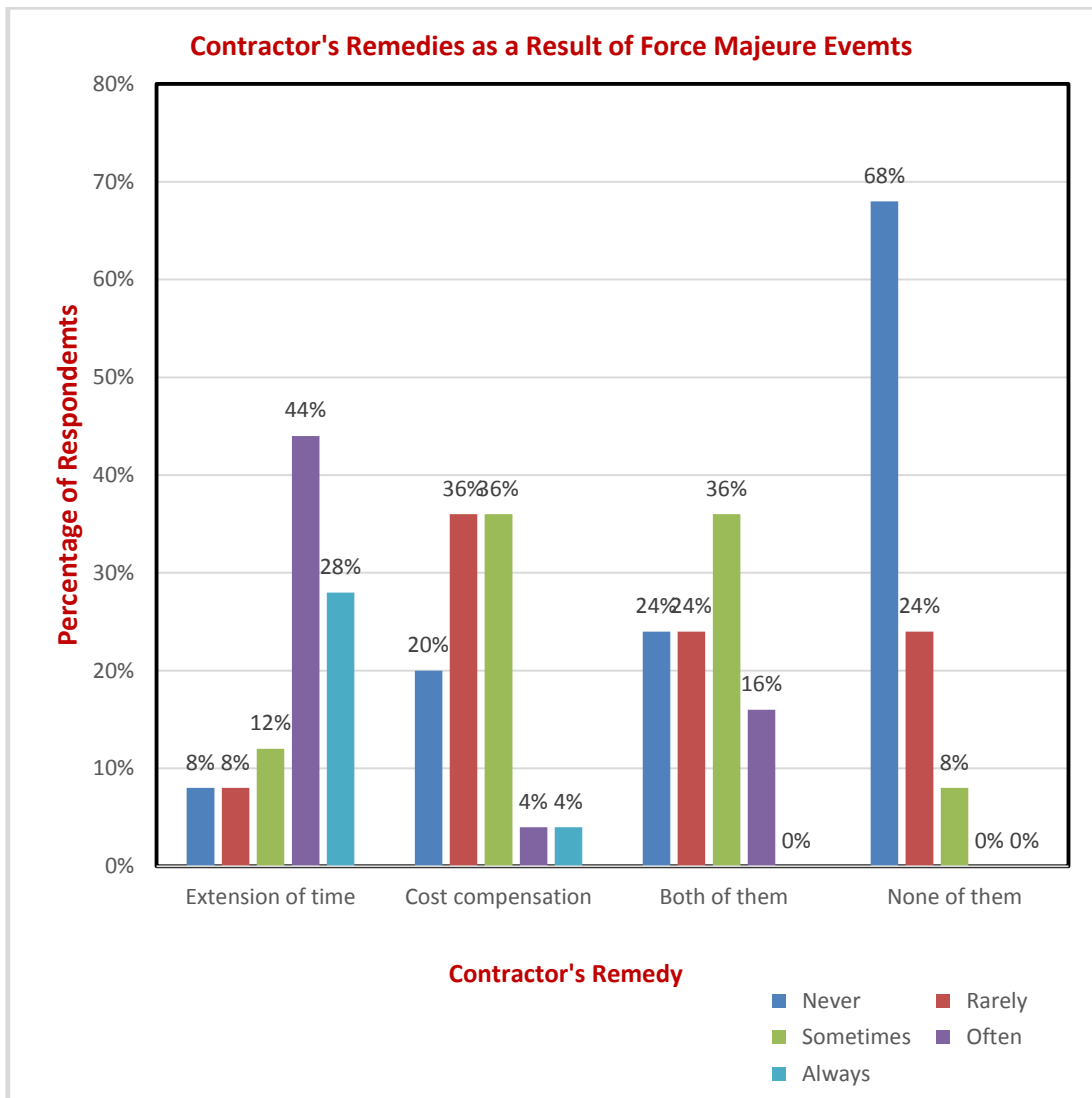


Figure 27: Contractor's Compensation due to Force Majeure

4.6.5 Effect of Force Majeure Clause in Reducing the Disputes

The respondents' opinions were investigated about whether the drafting of a force majeure clause contributes in reducing the disputes between contracts' parties. Table 30 and Figure 28 below illustrates that there is a consensus of the respondents - to varying degrees - that the force majeure clause contributes in reducing disputes.

Table 30: *Effect of Force Majeure Clause in Reducing Disputes*

Contribution in Reducing Disputes	Frequency				
	Never	Rarely	Sometimes	Often	Always
	0	1	8	8	8

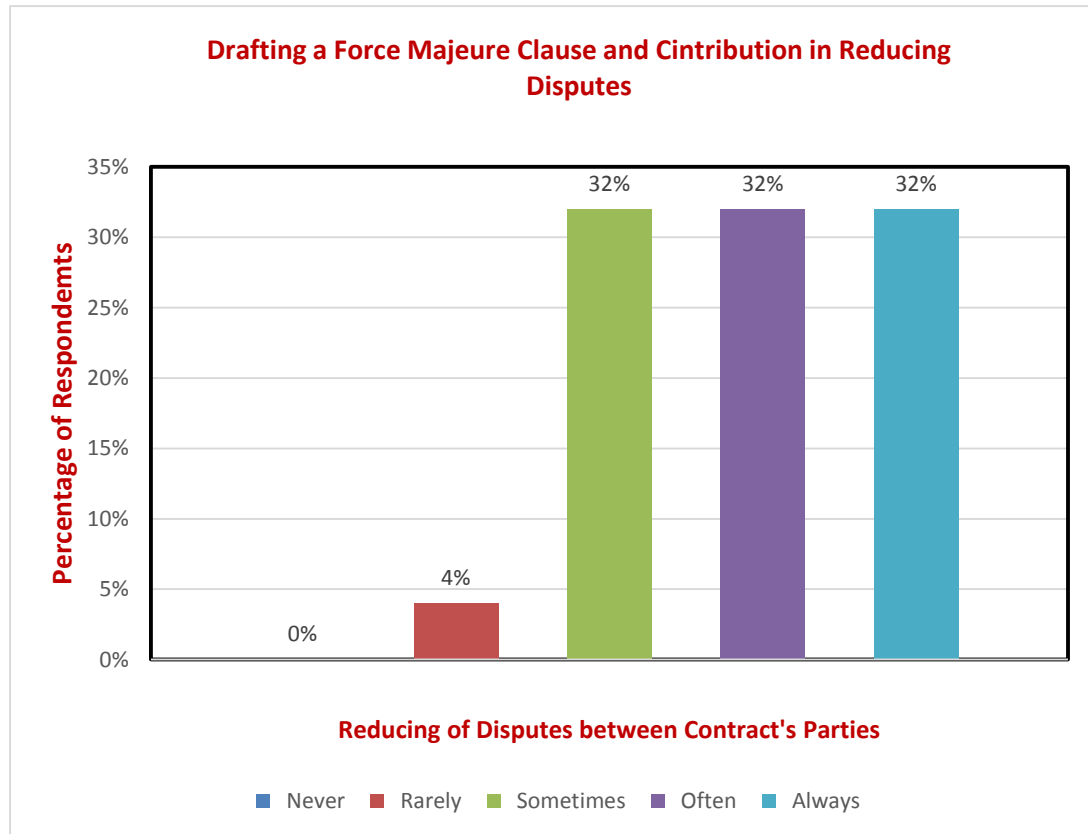


Figure 28: *Effect of Force Majeure Clause in Reducing Disputes*

CHAPTER 5 : MODEL DEVELOPMENT AND VERIFICATION

5 . 1 Development of the Model Force Majeure Clause

There is no standard force majeure clause that can fit for all cases and contracts. However, the amount of effort exerted in drafting the force majeure clause should be proportional to the level of risk in the contract. A way to approach the drafting of force majeure clauses was determined based on the literature review, survey results and a number of contracts dealt with by the researcher during his professional life.

The survey results were greatly helpful in drafting the clause as they provided the past experience of the respondents in dealing with force majeure events and the practical application of the contracts that were administrated by them. The survey provided their perspective regarding the concept and definition of force majeure, the characteristics of the events that can be considered force majeure and the obligations of contract parties upon occurrence of any of such events. Moreover, the respondents expressed their opinions and experience regarding the way that is force majeure treated in civil and common law systems. Finally the respondent answers were a guide to determine the consequences of force majeure and the due remedies to the contract party that affected by the force majeure event.

Twenty contracts were selected among large number of contracts dealt with by the researcher during his career. Most of such contracts are construction contracts and the minority are consultancy services contracts. The existence of a well drafted force majeure clause is the common feature of these contracts. Such force majeure clauses contributed in forming the model force majeure clause. It is worth mentioning that one of the clauses was based on a sample force majeure clause mentioned in the World Bank Group website.

The following elements were considered to ensure the completeness and comprehensiveness of the force majeure clause:

- Definition of force majeure
- Events considered as force majeure
- Notice of force majeure
- Obligation of mitigation the force majeure effects
- Consequences of force majeure

5 . 1 . 1 Definition of Force Majeure

General speaking, International contracts often include one of following types of force majeure clauses: a clause clearly defines the concept of force majeure; second refers to provisions of a certain law and other does not include any definition of the force majeure (Polkinghorne *et al*, 2015).

In many cases, clauses that include a definition of the force majeure concept apply unspecific criteria and less rigorous standard. For instance, some clauses do not state that the performance has to be impossible. Instead, such clauses only state that the performance is prevented, delayed, adversely affected or hindered. Moreover, in some clauses the criteria are limited to the standard of reasonableness which often describes the uncontrollability, un-foreseeability or unavailability.

Some other clauses do not clearly define the concept of force majeure as they, instead, refer to the governing law of the contract or to the decisions of the high courts in the Country. However, the drafter should take care when making such reference to avoid doubts resulting from vague formulations. Moreover, when the clause references to the force majeure definition in a certain law, such law should be the same applicable law of the contract; otherwise a conflict of laws might take place. Another type of clauses do not contain any definition of force majeure concept and that type is the least

common. In such type of clauses, the contract parties shall be under the mercy of the law applicable to the contract as the provisions of such law shall determine the definition of the force majeure (Polkinghorne *et al*, 2015).

In some cases, the event is in fact completely beyond a party's control when it occurs, but by taking reasonable measures beforehand, could be controlled. Therefore, force majeure clauses should expressly specify that if the event could have been controlled, prevented, overcome, avoided or mitigated by exercising reasonable measures, then such event shall not be considered as force majeure (Elwood, 2012). In light of the aforementioned, the following is a suggested part of the model force majeure clause that represents the definition of force majeure:

1. Force Majeure

The term "Force Majeure Event" means any exceptional circumstance which demonstrably could not have been reasonably foreseen before the effective date of the Agreement and which is beyond the reasonable control of the affected Party, but only if and to the extent that (i) such circumstance cannot be, or be caused to be, overcome, avoided or prevented by such Party despite the consideration of good practice and the exercise of due diligence, and (ii) such circumstance adversely and materially affects the ability of the Party to perform its obligations under this Agreement to the extent that the performance of such obligations become impossible or unlawful, and such Party has taken all reasonable precautions, reasonable alternative measures and due care in order to avoid the antagonistic effect of such event on the Party's ability to carry out its obligations under the Agreement and to mitigate the consequences thereof.

5.1.2 Event Considered As Force Majeure

Arbitrators usually tend to interpret the principle of force majeure narrowly. Therefore, the events that will be considered as force majeure, which provide an excuse from performing the obligations, should be explicitly stated using a very clear language. In addition, it should be clearly mentioned whether the provisions of the clause apply equally to all events or such application varies according to each set of events. It is worth mentioning that providing a clear illustrative non-exclusive list of events that constitute force majeure shall strongly contribute in eliminating the uncertainty in the contract (Polkinghorne *et al*, 2015).

Courts also have the tendency to construe force majeure clauses narrowly, so that the force majeure shall cover only the listed events and the similar ones. For instance, if the clause states that act of terrorism is a force majeure event, this does not necessarily mean that the court will consider the threats of terrorism as an event also. Accordingly, it is too important to list, explicitly, the circumstances that will grant a contract party a relief from the performance (Ryan, 2011).

Generally speaking, force majeure events can be classified into basic groups: natural, political, incidents and accidental events. The following is the suggested part of the model force majeure clause that represents the groups of events of force majeure:

2. Events of Force Majeure

Force majeure may include, but is not limited to, exceptional events or circumstances of the kind listed below, so long as the above conditions are satisfied:

- a. earthquakes, flood, landslide, tempest, washout, fire or other physical natural disaster.

- b. actions of military, invasion, war, hostilities, act of foreign enemies (whether war be declared or not), acts or threats of terrorism, insurrection of military or usurped power, civil war, requisition or compulsory acquisition by any governmental or competent authority;
- c. civil disturbance, revolution, rebellion, insurrection, riot, sabotage, vandalism, blockade, explosions, strikes at national level, or strikes by labor not employed by the affected party, its suppliers or its subcontractors and which affect an essential part of the works;
- d. ionizing radiation or contamination within the Country, explosive materials, radio activity from any nuclear fuel or from any nuclear waste from the combustion of nuclear fuel, radioactive toxic explosive or other hazardous properties of any explosive assembly or nuclear component;
- e. pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speeds;
- f. expropriation, acts or restraints of a governmental body or authority, and failure to obtain a requisite permit or authorization from a governmental authority by reason of any statute, law, or any regulation;
- g. unusual delay by common carriers; and
- h. epidemic and quarantine.

5 . 1 . 3 Notice to Force Majeure

After defining the events constituting the force majeure, the clause then sets forth a notice requirement, which details the necessary procedure to invoke force majeure.

It is highly advisable to make sure that contract parties understand the importance of the notice provision so that they can issue notices to keep their rights before it is too late (Theroux *et al*, 2011).

Notice of the force majeure event should be given in writing within a certain time limit to keep the rights of the party invoking force majeure. Additionally, the affected party should, in general, submit an evidence of the event, either upon issuance of the notice or at reasonable time after such issuance as it may take time to gather the evidence. Sometimes, a notice after the expiry of the force majeure event is also required. The notification is a material requirement in the force majeure clause. If the non performing party fails to notify the performing party for the force majeure event within the stated time limit, the performing party may lose his entitlement to invoke the clause (Polkinghorne *et al*, 2015). The following is the suggested part of the model force majeure clause that represents the notice to force majeure:

3. Notice of Force Majeure

Upon occurrence of a Force Majeure event, the affected Party (the nonperforming party) shall promptly notify the other party (the performing party) of occurrence of that Force Majeure event, its effect on performance, and how long that party expects it to last. Thereafter the affected Party shall update that information as reasonably necessary. The notice shall be given within 14 days after the affected Party became aware, or should have become aware, of the Force Majeure event. Furthermore, the affected Party shall give a prompt written notice to the other Party when it is again fully able to resume performing its obligations.

5 . 1 . 4 Obligation of Mitigating the Force Majeure Effects

Duty to mitigate the effects of force majeure is one of the subjects that frequently emerges in the jurisprudence. The force majeure clause should contain an express duty of the nonperforming party to overcome and mitigate the event effects as far as he can. The following is the suggested part of the model force majeure clause that represents the obligation of mitigation the force majeure effects:

4. Obligation of Mitigating the Force Majeure Effects:

If and to the extent that the contractor is hindered from performing the work upon occurrence of force majeure event , the contractor shall be excused from its obligations to execute such work but shall: a) endeavor to continue performing its obligations under the Agreement so far as reasonably practicable, b) take all reasonable steps to remedy or abate the Force Majeure and mitigate its effects on the Employer and c) keep the Employer fully informed of such steps as have been taken and are planned, provided that if and to the extent that the contractor incurs additional cost in so doing, the contractor shall be entitled to be compensated for such cost without profit. Moreover, the contractor shall take reasonable measures to mitigate such cost.

5.1.5 Consequences of Force Majeure

Finally, the force majeure clause gives the details of its consequences, most often suspension and time extension or partial or full termination.

Either of contract parties shall be relieved from performance of his contractual obligations without being in breach of contract subject to the failure of performance is a result of one of the force majeure events which are listed in the provisions of the clause. In case a force majeure event took place and affected the performance of one or more parties, the work on site shall be suspended until the end of the event then it will resume again in full power.

It is worth mentioning that suspension of the work on site will not be a practicable solution if the time is of essence for the contract so that it represents one of the fundamental contractual obligations. In such case, the contract may be terminated. The decision of whether the contract will be terminated or suspended depends also on other factors such as the intention of the parties and purpose of the performed work.

(Amkhan A. , 1991). If the force majeure event continues for a certain period, the contract shall be subject to the optional termination. Despite that the survey results show that the majority of the respondents consider the period of 60–120 days is suitable for such termination, a period of 180 used in the context of the clause in order to maintain the contractual relationship to the fullest extent possible and to avoid uncompleted contracts.

The following is the suggested part of the force majeure model clause that concerns with the consequences of the force majeure:

5. Consequences of Force Majeure:

- Neither party shall be considered in breach of its obligations under this Agreement or hold liable to the other party for any damages or losses of any kind whatsoever suffered or incurred by that other if and to the extent that performance of such obligations (except for the obligations of payment the due amounts) is prevented as a direct result of the Force Majeure event that takes place after the effective date of the Agreement.
- If and to the extent that the contractor is delayed during the time for completion as a result of work suspension due to occurrence of a force majeure event, then it shall be entitled to a time extension accordingly.
- Upon expiration of the event of force majeure, the party affected must as soon as reasonably practicable resume the performance of all obligations affected by Force Majeure.
- If it is reasonably foreseeable at the time notice of the Force Majeure event is given or is required to be given pursuant to Sub-Clause 3 above that either or both Parties will be unable, fully and permanently, to perform their obligations

under this Agreement, then upon notice by either Party to the other Party of such event, the Agreement will be terminated and the Parties will be discharged from further performance.

- Notwithstanding any extension of time for completion, if a Force Majeure event occurs and persists for a period exceeds 180 consecutive calendar days, either party may give to the other party a 28 days' written notice of termination of the Agreement. If, after the expiration of such notice period, the effect of the Force Majeure event continues, the Agreement shall be terminated.
- Within 30 days of termination of this Agreement due to Force Majeure event pursuant to this Sub-Clause, the Employer shall pay the Contractor the due amount according to the work performed up to the date of termination including approved materials and equipment delivered to the site.

5 . 1 . 6 The Life Cycle of the Force Majeure Event as Demonstrated in the Clause

Figure 29 below shows a flow chart representing the life cycle of the force majeure event effect, as per the model clause, starting from its occurrence up to its expiration or contract termination and passing through the obligation of notification and mitigation and the consequences of the event.

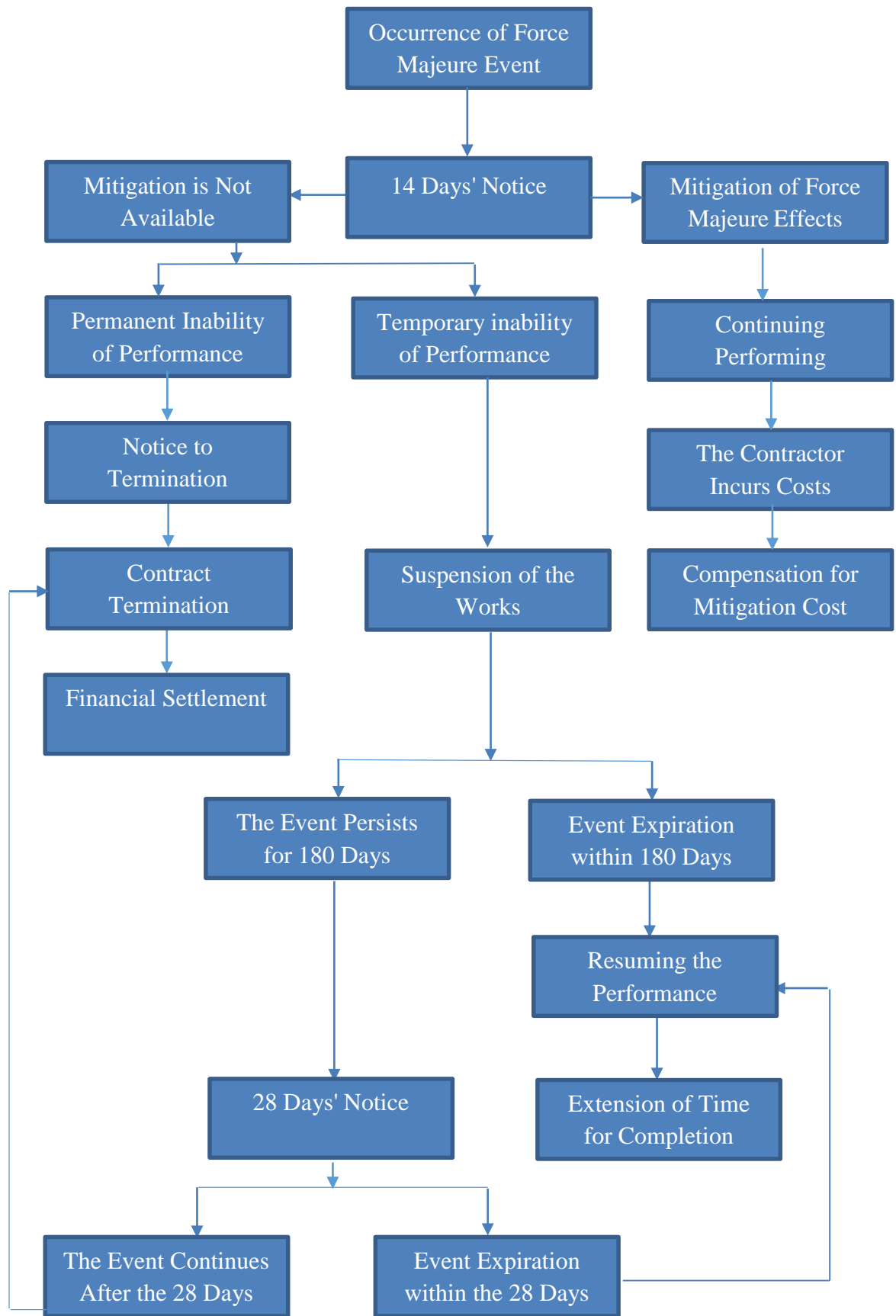


Figure 29: Flow Chart of Force Majeure Occurrence and Consequences

5 . 1 . 7 Main Features of the Force Majeure Model Clause

The Model Clause is drafted to cover the aspects of the force majeure event that might not be covered in many of the contracts in construction industry and to find solutions for different situations resulting from the occurrence of force majeure. The following are the main features that distinguish the Model Clause:

- Inclusiveness; the Clause is inclusive as it deals with all aspects of the force majeure event starting from its occurrence until its expiry.
- Specific definition of force majeure event providing a comprehensive description of its characteristics that give a complete vision leaving no room for doubt or interpretation.
- Broad wide list of events that constitute force majeure covering events that, despite their negative effect on work progress in many cases, are not usually considered in most contracts such as unusual delay by carriers of goods and materials, acts or restraints of a governmental authority and failure to obtain a requisite permit or authorization by reason of any statute or regulation.
- The Clause obliges the affected party – often the contractor - to notification upon occurrence of the event not only to inform the other party of such occurrence, but also to provide it the full information about the expected duration of the event and its effect on the work progress. Moreover, another notification is required from the affected party upon the end of the event.
- Another obligation on the Contractor to exert its endeavor to continue performing and to mitigate the effect of the force majeure event.
- The Clause is complying with the civil law that does not entitle any of the parties to be compensated for any damages or losses resulted from the force majeure. The contractor, according to the Clause, shall be compensated only for the

additional costs incurred in mitigating the effects of the event and, in case of termination, the contractor shall be paid the due amount according to the work performed up to the date of termination.

- The Clause mentions all possible consequences of the force majeure event. Such consequences will be either resuming the work if the event is elapsed after a reasonable period of time, early termination if it is foreseen that the parties will no longer be able to resume the work or early termination in case the event persists for a certain long period.

5 . 2 Verification of the Developed Model of Force Majeure Clause

The developed model of force majeure clause is verified using experts' opinions. The assessment of three experts having a wide experience in the field of contract administration were investigated regarding the force majeure model clause. The investigation included all elements of the clause, the arrangement of such elements in addition to the effect of the provisions of the clause on the obligations of contract's parties. The first expert is working in an international consultancy firm having its head office in Egypt and several branched in Middle East, Africa and Asia. The second is working in a construction company in Kingdom of Saudi Arabia. The third expert is working in an Egyptian Consultancy Firm. The first and the second experts have a legal background in addition to their engineering background. Each of the experts have an experience up to about twenty years in the field of contracts administration in Egypt and outside. They dealt with several types of contracts that are governed by civil law and common law legal systems. The opinions and analysis of the experts are as follows:

5 . 2 . 1 First Expert Analysis

The First expert explained that the clause starts with a definition of the force majeure event using a generic words “any exceptional circumstance which demonstrably

could not have been reasonably foreseen before the effective date of the Agreement and which is beyond the reasonable control of the Party affected”, that has been specified by two conditions: the inability of the affected Party to avoid such an event in addition to the severe impact of such an event on the performance of the obligation to the extent that makes the performance impossible. The expert asserted that these two conditions are wisely limiting the events that can be treated under the Force Majeure Clause in order not to misuse its condition by any of the Parties. However, the expert suggested that such a definition has to take into consideration the partial impossibility of performance due to Force Majeure as it shall go under the same rules and conditions as the full impossibility of performance.

In addition, the expert clarified that stating the Contractor’s obligation to take all the possible precautions to avoid the impact and to mitigate the consequences of the force majeure event is very beneficial to ensure that the affected party will not neglect his duties to benefit from the Force Majeure conditions. However, the aim of such obligation might be modified to be either avoidance or reduction of the impact of the force majeure event.

The expert illustrated that a set of different Force Majeure Events are stated in the second sub-article in the clause and conditioned by the characteristics mentioned in the first sub- article in order to be considered as Force Majeure. According to the expert, the mentioned events are covering the major common Force Majeure events in the Construction Contracts, moreover, there is an event that is not common in the force majeure Clauses which is the failure to obtain permits due to regulations. Such an addition gives more risk sharing balance to the contract, however, it has to be restricted to the new regulations that announced after signing the Agreement because each party

is supposed to be aware of all the regulations and laws, applied at the time of signing the contract, which may hinder obtaining any required permits.

Furthermore, the expert explained that the notice part of the Clause fairly requires from the nonperforming party to inform the performing party with the occurrence of the force majeure event in order to allow the performing party to take the needed precautions. The notice period of 14 days, after the non performing Party becomes aware or should have become aware of the event, is reasonable especially that it is required from the nonperforming Party to do some effort in order to estimate the expected duration of the force majeure event and its effect.

Moving to the following sub-clause, the expert emphasized that the sub-clause states a vital obligation on the Contractor to mitigate the force majeure effects in addition to the Employer's obligation to pay the Contractor all costs incurred due to such mitigation which represents very balanced risk allocation. Meanwhile, The Sub-Clause states that the occurrence of force majeure shall relieve the Contractor's from his obligations under the Agreement, although the first liability of mitigation is endeavoring to perform the Contractor's obligation under the Agreement. So it will be more reliable if it is stated that the occurrence of force majeure shall relieve the Contractor from his obligations or part of them.

The expert added that the last sub-clause is the consequences of the force majeure event on the obligations of each Party. This Clause counts for the delays that may happen due to the suspension of work under force majeure event and the entitlement of the contractor to a time extension as a result. Moreover, The case of full impossibility to perform the works due to force majeure event releases both the contractor and the employer from their obligations under the agreement, however the Employer is obligated to pay the contractor all the due amounts for the work performed

and the material approved which is fair to allocate the risk of the damage to the performed works to the employer rather than the contractor as he has already fulfilled his liabilities.

Finally, the expert sum up that the proposed force majeure clause is covering most of the issues and risks related to the occurrence of force majeure event and it has a fair risk allocation between the contractor and the employer.

5.2.2 Second Expert Analysis

The second expert indicated that the model clause prudently defines the force majeure to be beyond the control of the affected party, considering that the affected party has exerted a reasonable diligence to overcome it, and further adds a constraint to define the event as a force majeure that such event shall have an effect on the performance of the affected party's obligation under the Agreement. However, the expert believed that limiting the force majeure to such events that make the performance of the obligation become impossible or unlawful would eliminate some of the considerable Force Majeure events which may partially prevent the affected party but not to the limit of impossibility of performing the obligations. So, the expert suggested adding that the force majeure may lead to partially prevent the affected party from performing his obligations. It is noticed both of the first and the second experts have the same point of view in that matter.

Furthermore, the expert explained that drafter of the model clause spotted out most of the events of the force majeure and added a new major event in item (f) which most of the force majeure clause disregard. The expert expressed his full agreement with the drafter that the delays and disruptions of the governmental authorities should be considered as a type of the force majeure events as it is beyond the reasonable control of the parties especially in most of the Middle East and North Africa countries.

Regarding sub-article 3 of the clause, the expert considered that the notice period of 14 days is sufficient for notifying the force majeure event, but he suggested adding a paragraph for dealing with the case of failure of giving such notice by the affected party. In addition, the expert suggested that the affected party should notify the other party when it is again able, not necessarily fully able, to perform its obligations because resuming work after the expiry of the force majeure event could be partially.

Moreover, the expert clarified that reasonable mitigation of force majeure should not be compensable but considered as one of due diligence responsibilities, unless exceptional mitigation is requested by the other party which involves additional costs. The drafter opposes such opinion as without the occurrence of force majeure event, the affected party would not have to exert the effort of mitigation.

Finally, the expert fully supported the drafter concept of contract termination if the permanent impossibility of the performance is expected and in case of prolonged suspension.

5 . 2 . 3 Third Expert Analysis

The third expert went to great lengths to the description and definition the force majeure. In his opinion, force majeure should be beyond any control of the affected party rather than the reasonable control of that party. It is clear that expert's opinion has been greatly influenced by the common law that gives a very limited excuse to the contract party in case of force majeure occurrence.

According to the expert, the list of the force majeure events following the definition are comprehensive and has a broad coverage. However, the expert indicated that certain events should be added to the force majeure events. Such events are hurricane, typhoon, volcanos, lightning as natural disasters in addition prolonged shortage of energy supplies, mainly in the remote sites.

The expert was fully satisfied with other provisions of the model clause; notice of force majeure, obligation of mitigation its effects and consequences of force majeure.

Table 31 below summarizes the opinions of the three experts regarding each sub-clause of the model clause and the additions and modifications suggested by them for each sub-clause.

Table 31: *Modifications suggested by the experts to the force majeure model clause*

Sub-Clause	First Expert	Second Expert	Third Expert
1. Definition of Force Majeure	<ul style="list-style-type: none"> - Adding the partial impossibility of performance as a result of force majeure rather than the full impossibility only. - The obligations of the affected party should be either to avoid or to reduce the consequences of force majeure not only to avoid them. 	Adding the partial impossibility of performance as a result of force majeure rather than the full impossibility only.	Force majeure should be beyond any control of the affected party rather than the reasonable control of that party. (The drafter opposes such opinion)

<p>2. Events of Force Majeure</p>	<p>Restricting failure to obtain permits as a force majeure event to the statutes and regulations that have been announced after signing the Contract.</p>		<ul style="list-style-type: none"> - Adding hurricane, typhoon, volcanos, lightning as natural disasters to force majeure events. - Adding prolonged shortage of energy supplies, mainly in the remote sites to the force majeure events
<p>3. Notice of Force Majeure</p>		<ul style="list-style-type: none"> - Adding a paragraph dealing with the case of failure of giving the notice of force majeure by the affected party. - Stating that the affected party should notify the other party when it is again able, not necessarily fully able, to perform its obligations 	
<p>4. Obligation of Mitigation the Force Majeure Effects</p>	<p>Stating that the occurrence of force majeure shall relieve the Contractor from his obligations or part of them instead of relieving him from</p>	<p>Reasonable mitigation of force majeure should not be compensable but considered as one of due diligence responsibilities, unless exceptional mitigation</p>	

	his obligations absolutely.	is requested by the other party which involves additional costs. (The drafter opposes such opinion)	
5. Consequences of Force Majeure			

5.2.4 The Updated Model of Force Majeure Clause

The model clause was updated by implementing most of the experts' valuable additions. The update includes the following:

1. Adding "*or part thereof*", in sub-clause 1 and 4, as the effect of force majeure on the performance of the obligations may be in some cases partially rather than totally.
2. Adding "*or reduce*", in sub-clause 1, to the obligations of the affected party upon occurrence of force majeure event, so that the obligations of such party shall be either to avoid or to reduce the consequences of force majeure.
3. Adding "*newly imposed*", in sub-clause 2, as a description of the statute, law and regulation that may cause failure in obtaining permits, point "f" of the events of force majeure.
4. Adding "*hurricane, typhoon, volcanos, lightning*", in sub-clause 2, to the force majeure events as natural disasters.
5. Adding "*prolonged unavoidable shortage of energy supplies*", in sub-clause 2, to the force majeure events.

6. Adding the paragraph of "*Failure to give such notice in time, the other party shall be entitled to damages for losses resulting from the no-recipient or late receipt of such notice*" as a consequence of failure to notifying the force majeure event in sub-clause 3.
7. Deletion of the word "fully" in last paragraph of sub-clause 3.

The following is the updated model clause after incorporating the above mentioned additions. All the added words and paragraphs are distinguished by underlined italic font:

Force Majeure

1. Definition of Force Majeure

The term "Force Majeure Event" means any exceptional circumstance which demonstrably could not have been reasonably foreseen before the effective date of the Agreement and which is beyond the reasonable control of the affected Party, but only if and to the extent that (i) such circumstance cannot be, or be caused to be, overcome, avoided or prevented by such Party despite the consideration of good practice and the exercise of due diligence, and (ii) such circumstance adversely and materially affects the ability of the Party to perform its obligations under this Agreement to the extent that the performance of such obligations, or part thereof, becomes impossible or unlawful, and such Party has taken all reasonable precautions, reasonable alternative measures and due care in order to avoid or reduce the antagonistic effect of such event on the Party's ability to carry out its obligations under the Agreement and to mitigate the consequences thereof.

2. Events of Force Majeure

Force majeure may include, but is not limited to, exceptional events or circumstances of the kind listed below, so long as the above conditions are satisfied:

- a. earthquakes, flood, landslide, tempest, washout, fire, *hurricane, typhoon, volcanos, lightning* or other physical natural disaster.
- b. actions of military, invasion, war, hostilities, act of foreign enemies (whether war be declared or not), acts or threats of terrorism, insurrection of military or usurped power, civil war, requisition or compulsory acquisition by any governmental or competent authority;
- c. civil disturbance, revolution, rebellion, insurrection, riot, sabotage, vandalism, blockade, explosions, strikes at national level, or strikes by labor not employed by the affected party, its suppliers or its subcontractors and which affect an essential part of the works;
- d. ionizing radiation or contamination within the Country, explosive materials, radio activity from any nuclear fuel or from any nuclear waste from the combustion of nuclear fuel, radioactive toxic explosive or other hazardous properties of any explosive assembly or nuclear component;
- e. pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speeds;
- f. expropriation, acts or restraints of a governmental body or authority, and failure to obtain a requisite permit or authorization from a governmental authority by reason of any *newly imposed* statute, law, or any regulation;
- g. *prolonged unavoidable shortage of energy supplies.*
- h. unusual delay by common carriers; and
- i. epidemic and quarantine.

3. Notice of Force Majeure

Upon occurrence of a Force Majeure event, the affected Party (the nonperforming party) shall promptly notify the other party (the performing party) for the occurrence of that Force Majeure event, its effect on performance, and how long that party expects it to last. Thereafter the affected Party shall update that information as reasonably necessary. The notice shall be given within 14 days after the affected Party became aware, or should have become aware, of the Force Majeure event. Failure to give such notice in time, the other party shall be entitled to damages for losses resulting from the no-receipt or late receipt of such notice.

Furthermore, the affected Party shall give a prompt written notice to the other Party when it is again able to resume performing its obligations.

4. Obligation of Mitigation the Force Majeure Effects:

If and to the extent that the contractor is hindered from performing the work upon occurrence of force majeure event , the contractor shall be excused from its obligations, or part thereof, to execute such work but shall: a) endeavor to continue performing its obligations under the Agreement so far as reasonably practicable, b) take all reasonable steps to remedy or abate the Force Majeure and mitigate its effects on the Employer and c) keep the Employer fully informed of such steps as have been taken and are planned, provided that if and to the extent that the contractor incurs additional cost in so doing, the contractor shall be entitled to be compensated for such cost without profit. Moreover, the contractor shall take reasonable measures to mitigate such cost.

5. Consequences of Force Majeure:

- Neither party shall be considered in breach of its obligations under this Agreement or hold liable to the other party for any damages or losses of any kind whatsoever suffered or incurred by that other if and to the extent that

performance of such obligations (except for the obligations of payment the due amounts) is prevented as a direct result of the Force Majeure event that takes place after the effective date of the Agreement.

- If and to the extent that the contractor is delayed during the time for completion as a result of work suspension due to occurrence of a force majeure event, then it shall be entitled to a time extension accordingly.
- Upon expiration of the event of force majeure, the party affected must as soon as reasonably practicable resume the performance of all obligations affected by Force Majeure.
- If it is reasonably foreseeable, at the time notice of the Force Majeure event is given or is required to be given pursuant to Sub-Clause 3 above, that either or both Parties will be unable, fully and permanently, to perform their obligations under this Agreement, then upon notice by either Party to the other Party of such event, the Agreement will be terminated and the Parties will be discharged from further performance.
- Notwithstanding any extension of time for completion, if a Force Majeure event occurs and persists for a period exceeds 180 consecutive calendar days, either party may give to the other party a 28 days' written notice of termination of the Agreement. If, after the expiration of such notice period, the effect of the Force Majeure event continues, the Agreement shall be terminated.
- Within 30 days of termination of this Agreement due to Force Majeure event pursuant to this Sub-Clause, the Employer shall pay the Contractor the due amount according to the work performed up to the date of termination including approved materials and equipment delivered to the site.

5.3 Comparing the Model Clause with Currently Executed Contracts

To check the accuracy and integrity of the force majeure model clause, a comparison is conducted between it and the force majeure clauses in the four contracts mentioned in the introduction of this research. All the contracts are for mega construction projects in different countries, Egypt, Qatar, UAE and Republic of Niger. The full clauses are presented in Appendix B of the thesis. The comparison is held in the following eight aspects of force majeure:

1. Definition and characteristics,
2. Force majeure events
3. Exclusion from force majeure events
4. Notice of occurrence of the force majeure event
5. Notice of expiration of the force majeure event
6. Obligation of mitigation
7. Compensation for mitigation action costs
8. Consequences of force majeure including: parties' responsibilities, extension of time, early termination, optional termination, payment after termination.

One of the mentioned contracts is a FIDIC based contract and the others are ad-hoc contracts.

5.3.1 Contract No. 1 "Two Power Plants in Attaqa and Mahmoudia"

The contract was entered into on December 20, 2014 between Government of the Arab Republic of Egypt and Elsewedy PSP S.A.E. for the construction of the project of "Engineering, Supply, Construction, Installation & Testing of Two Simple Cycle Power Plants in Attaqa and Mahmoudia in Egypt". The time for completion is twenty four months. The project now is in the commissioning and testing stage. The Contract is EPC type and the governing law is the Egyptian Civil Law. The following table 32

represents a comparison between the force majeure clause of the contract and the developed model clause:

Table 32: *Comparison between Contract No.1 Force Majeure Clause and Model Clause*

Aspects of Force Majeure	" Two Power Plants in Attaqa and Mahmoudia " Force Majeure Clause	Force Majeure Model Clause
Definition and characteristics	- Causes beyond either Party's reasonable control	<ul style="list-style-type: none"> - Exceptional circumstance which is not foreseen and not within the reasonable control of the affected Party. - Circumstance cannot be overcome, prevented or avoided by such Party. - Circumstance that adversely and materially affects the ability of the Party to perform its obligations to the extent that the performance of such obligations, or part thereof, become impossible or unlawful. - The affected Party has taken all reasonable alternative measures and due care in order to mitigate the consequences.
Force Majeure Events	<ul style="list-style-type: none"> - Strike, riot, revolution, political strife, war or warlike operation. - Extraordinary natural events such as weather condition prohibiting work, typhoons, earthquakes, fires, or floods. 	<ul style="list-style-type: none"> - Earthquakes, flood, landslide, tempest, hurricane, typhoon, volcanos, lightning, washout and fire. - Actions of military, invasion, war, hostilities, act of foreign enemies, acts or threats of terrorism, insurrection of

	<ul style="list-style-type: none"> - Energy shortage or shortage of material resources resulting from energy shortage. - Acts of Government including requirements arising from any laws, rules. 	<ul style="list-style-type: none"> military or usurped power, civil war, requisition or compulsory acquisition. - Civil disturbance, revolution, rebellion, insurrection, riot, sabotage, vandalism, blockade, explosions and strikes. - Ionizing radiation or contamination within the Country, explosive materials, radio activity from any nuclear fuel or nuclear component. - Pressure waves caused by aircraft travelling at sonic or supersonic speeds. - Expropriation, acts or restraints of a governmental body or authority, and failure to obtain a requisite permit by reason of newly imposed statute, law or regulation. - Prolonged unavoidable shortage of energy supplies. - Unusual delay by common carriers.
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		- Epidemic and quarantine.
Exclusion from Force Majeure events	<ul style="list-style-type: none"> - Employer's default in obtaining the Construction Permit. - Failure of the Contractor to deliver any Equipment, or portions thereof. 	- Strikes by labor employed by the affected party, its subcontractors or its suppliers.
Notice of occurrence of the force majeure event	The Party that experiences a failure or delay as a result of Force Majeure, shall promptly notify the other Party of such failure or delay.	The notice shall be given within 14 days after the affected Party became aware, or should have become aware, of the Force Majeure event. Otherwise the other Party shall be entitled to compensation.
Notice of expiration of the force majeure event	Notification shall be provided to the other Party promptly after the beginning date and ending of Force Majeure effects.	The affected Party shall give a prompt written notice to the other Party when it is again able to resume performing its obligations.
Obligation of mitigation	The Party delayed shall use its best efforts to avoid or remove the cause of the failure or delay and to minimize its effect as quickly as possible.	the contractor shall endeavor to continue performing its obligations so far as reasonably practicable, take all reasonable steps to remedy or abate the Force Majeure and mitigate its effects and keep the Employer fully informed of such steps.
Compensation for mitigation action costs	Not mentioned	If the contractor incurs additional cost in so doing, the contractor shall

		be entitled to the amount of such cost without profit.
Consequences (parties' responsibilities)	Neither Party shall be responsible for nor deemed to be in default under the Contract on account of any failure or delay in performance due to Force Majeure.	Neither party shall be considered in breach of its obligations under this Agreement or hold liable to the other party for any damages or losses if the performance of such obligations is prevented as a direct result of a Force Majeure event.
Consequences (extension of time)	Not mentioned	If the contractor is delayed as a result of work suspension due to occurrence of a force majeure event, then it shall be entitled to a time extension.
Consequences (early termination)	Not mentioned	If it is reasonably foreseeable at the time of notice of the Force Majeure event is given that either or both Parties will be unable, fully and permanently, to perform their obligations under this Agreement, then upon notice by either Party to the other Party, the Agreement will be terminated.

Consequences (optional termination)	The Contract shall be terminated by a written notice from GoE to the Contractor if the effect of Force Majeure event continues for a period of ninety (90) calendar days (or any extension thereof, if authorized by the GoE).	If a Force Majeure event occurs and persists for a period exceeds 180 consecutive calendar days, either party may give to the other party a 28 days' written notice of termination of the Agreement. If, after the expiration of such notice period, the effect of the Force Majeure event continues, the Agreement shall be terminated.
Consequences (payment after termination)	Not mentioned	Within 30 days of termination of this Agreement due to Force Majeure event, the Employer shall pay the Contractor the due amount according to the work performed up to the date of termination.

From the above comparison, it is noticed that the Model Clause could be applied to the "Two Power Plants Contract" as both contracts are dealing with force majeure as a sufficient cause for discharging from contractual liability either partially or totally. However, the Model Clause is discriminated with the following:

- Broader definition and characteristics of force majeure.
- More detailed and wider range of events of force majeure.
- A specific reasonable notice period upon occurrence of force majeure event.
- The consequences of no-recipient or late receipt of such notice

- Compensation for mitigation actions costs
- Extension of time as a result of force majeure event.
- Early termination in case of inability of performance.
- Financial settlement upon termination due to force majeure.

5.3.2 Contract No.2 "Ataranta Doha Island Resort"

The contract was entered into on January 20, 2013 between Public Work Authority - State of Qatar and Urbacon Trading and Contracting Company UCC for the construction of the project of "Ataranta Doha Island Resort". Contract time for completion is forty months. The project now is in the commissioning and testing stage. The Contract is design - build type and the governing law is the Qatari Civil Law. The following table 33 represents the comparison between the force majeure clause of the contract and the developed model clause:

Table 33: *Comparison between Contract No.2 Force Majeure Clause and Model Clause*

Aspects of Force Majeure	" Ataranta Doha Island Resort " Force majeure Clause	Force Majeure Model Clause
Definition and characteristics	- Event beyond the control of the Employer and the Contractor which makes impossible or illegal for a party to perform.	- Exceptional circumstance which is not foreseen and not within the reasonable control of the affected Party. - Circumstance cannot be overcome, prevented or avoided by such Party. - Circumstance that adversely and materially affects the ability of the Party to perform its obligations to the extent that the performance of

		<p>such obligations, or part thereof, become impossible or unlawful.</p> <ul style="list-style-type: none"> - The affected Party has taken all reasonable alternative measures and due care in order to mitigate the consequences.
<p>Force Majeure Events</p>	<ul style="list-style-type: none"> - War, hostilities, invasion, act of foreign armies, mobilization, requisition, or embargo. - Rebellion, revolution, insurrection or military usurped power, or civil war; - Contamination by radio-activity from any nuclear fuel, or from any nuclear waste from the combustion of nuclear fuel or nuclear component. - Riot, commotion or disorder 	<ul style="list-style-type: none"> - Earthquakes, flood, landslide, tempest, hurricane, typhoon, volcanos, lightning, washout and fire. - Actions of military, invasion, war, hostilities, act of foreign enemies, acts or threats of terrorism, insurrection of military or usurped power, civil war, requisition or compulsory acquisition. - Civil disturbance, revolution, rebellion, insurrection, riot, sabotage, vandalism, blockade, explosions and strikes. - Ionizing radiation or contamination within the Country, explosive materials, radio activity from any nuclear fuel or nuclear component. - Pressure waves caused by aircraft travelling at sonic or supersonic speeds. - Expropriation, acts or restraints of a governmental body or authority, and failure to obtain a requisite

		<p>permit by reason of newly imposed statute, law or regulation.</p> <ul style="list-style-type: none"> - Prolonged unavoidable shortage of energy supplies. - Unusual delay by common carriers. - Epidemic and quarantine.
Exclusion from Force Majeure events	Riot and commotion are restricted to employees of the Contractor or his subcontractors.	Strikes by labor employed by the affected party, its subcontractors or its suppliers.
Notice of occurrence of the force majeure event	Upon occurrence of an event of Special Risk and which may affect performance of Contractor's obligations, he shall promptly notify the Engineer	The notice shall be given within 14 days after the affected Party became aware, or should have become aware, of the Force Majeure event. Otherwise the other Party shall be entitled to compensation.
Notice of expiration of the force majeure event	Not mentioned	The affected Party shall give a prompt written notice to the other Party when it is again able to resume performing its obligations.
Obligation of mitigation	Each parties shall endeavor to continue to perform his obligations as far as practicable and shall notify the Engineer of any reasonable alternative means for performance.	the contractor shall endeavor to continue performing its obligations so far as reasonably practicable, take all reasonable steps to remedy or abate the Force Majeure and mitigate its effects and keep the

		Employer fully informed of such steps.
Compensation for mitigation actions costs	If the contractor incurs additional Cost in complying with the mitigation responsibility, such Cost shall be determined by the Engineer and shall be added to the contract price.	If the contractor incurs additional cost in so doing, the contractor shall be entitled to the amount of such cost without profit.
Consequences (parties' responsibilities)	Neither the Employer nor the Contractor shall be considered in default or in contractual breach to the extent that performance of obligations is prevented by a Special Risk event	Neither party shall be considered in breach of its obligations under this Agreement or hold liable to the other party for any damages or losses if the performance of such obligations is prevented as a direct result of a Force Majeure event.
Consequences (extension of Time)	Not mentioned	If the contractor is delayed as a result of work suspension due to occurrence of a force majeure event, then it shall be entitled to a time extension.
Consequences (early termination)	Not mentioned	If it is reasonably foreseeable at the time of notice of the Force Majeure event is given that either or both

		Parties will be unable, fully and permanently, to perform their obligations under this Agreement, then upon notice by either Party to the other Party, the Agreement will be terminated.
Consequences (optional termination)	If a Special Risk event occurs and its affect continues for a period of 182 days, either the party may give to the other a notice of termination, which shall take effect 28 days after the giving of the notice. If, at the end of the 28-day period, the effect of the Special Risk continues, the Contract shall terminate.	If a Force Majeure event occurs and persists for a period exceeds 180 consecutive calendar days, either party may give to the other party a 28 days' written notice of termination of the Agreement. If, after the expiration of such notice period, the effect of the Force Majeure event continues, the Agreement shall be terminated.
Consequences (payment after termination)	- amounts payable for any work carried out for which a price is stated in the contract; - Any cost was reasonably incurred by the Contractor	Within 30 days of termination of this Agreement due to Force Majeure event, the Employer shall pay the Contractor the due amount according to the work performed up to the date of termination.

	<p>in the expectation of completing the Works;</p> <ul style="list-style-type: none"> - The reasonable Cost of removal of temporary Works and Contractor's Equipment from the Site - The reasonable Cost of repatriation of the Contractor's staff and labor 	
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From the above comparison, it is noticed that the Model Clause could be applied to the "Ataranta Doha Island Resort" contract as both contracts are dealing with force majeure as a sufficient cause for discharging from contractual liability either partially or totally. However, the Model Clause is discriminated with the following:

- Broader definition and characteristics of force majeure.
- More detailed and wider range of events of force majeure.
- A specific reasonable notice period upon occurrence of force majeure event.
- The consequences of no-recipient or late receipt of such notice.
- A notice upon expiration of the force majeure event.
- Extension of time as a result of force majeure event.
- Early termination in case of inability of performance.

On the other side, the force majeure clause in "Ataranta Doha Island Resort" contract is discriminated with additional compensation to the contractor as a result of force majeure events. Such compensation includes the cost incurred by the Contractor

in the expectation of completing the Works and the cost of demobilizing the contractor's equipment and personnel. Moreover, it is worth mentioned that the contract used the expression of "Special Risks" instead of "Force Majeure" but with the same meaning, definition and characteristics.

5.3.3 Contract No.3 "EMAL Administrative Offices and Facilities"

The contract was entered into on February 9, 2016 between Emirates Aluminum Company Limited and Ali & Sons Contracting Company LLC, for the construction of the project of "EMAL Administrative Offices and Facilities". Contract time for completion is five hundred ninety five days. The project now is still ongoing. The contract is EPC type and the governing law is the Emeriti Civil Law. The following table 34 represents the comparison between the force majeure clause of the contract and the developed model clause:

Table 34: *Comparison between Contract No.3 Force Majeure Clause and Model Clause*

Aspects of Force Majeure	" EMAL Administrative Offices and Facilities" Force majeure Clause	Force Majeure Model Clause
Definition and characteristics	- Any event beyond the reasonable control of the Party affected by such event, occurring after the Commencement Date and which is unavoidable notwithstanding the reasonable care of the Party affected.	- Exceptional circumstance which is not foreseen and not within the reasonable control of the affected Party. - Circumstance cannot be overcome, prevented or avoided by such Party. - Circumstance that adversely and materially affects the ability of the Party to perform its obligations to the extent that the performance of

		<p>such obligations, or part thereof, become impossible or unlawful.</p> <ul style="list-style-type: none"> - The affected Party has taken all reasonable alternative measures and due care in order to mitigate the consequences.
<p>Force Majeure Events</p>	<ul style="list-style-type: none"> - Any natural disaster including flood, lightning, fire, smoke, cyclone, tornado, earthquake, tsunami. - Strikes or other labor disputes which are decreed or recommended for its members by a recognized contractors' association, of which the Contractor is a member or to which the Contractor is bound. - The failure of any Subcontractor to furnish materials or equipment on the dates agreed as a result of Force Majeure. - Sabotage, terrorism or act of a public enemy, civil disturbance, war, civil war, revolution, rebellion or insurrection, exercise of military or usurped power, boycott, invasion, acts of emergency, 	<ul style="list-style-type: none"> - Earthquakes, flood, landslide, tempest, hurricane, typhoon, volcanos, lightning, washout and fire. - Actions of military, invasion, war, hostilities, act of foreign enemies, acts or threats of terrorism, insurrection of military or usurped power, civil war, requisition or compulsory acquisition. - Civil disturbance, revolution, rebellion, insurrection, riot, sabotage, vandalism, blockade, explosions and strikes. - Ionizing radiation or contamination within the Country, explosive materials, radio activity from any nuclear fuel or nuclear component. - Pressure waves caused by aircraft travelling at sonic or supersonic speeds. - Expropriation, acts or restraints of a governmental body or authority,

	<p>blockade, embargo, sanction and riot.</p> <ul style="list-style-type: none"> - Nuclear, chemical or biological contamination. - Any plague or epidemic. - Pressure waves caused by devices travelling at supersonic speed. 	<p>and failure to obtain a requisite permit by reason of newly imposed statute, law or regulation.</p> <ul style="list-style-type: none"> - Prolonged unavoidable shortage of energy supplies. - Unusual delay by common carriers. - Epidemic and quarantine.
<p>Exclusion from Force Majeure events</p>	<ul style="list-style-type: none"> - Reasonably foreseeable weather conditions. - The failure of any Subcontractor to furnish labor, Services, materials or equipment on the agreed upon dates unless such failure is itself due to an event of Force Majeure; - General economic conditions and exchange rate fluctuation. - The financial condition of the Employer, the 	<p>Strikes by labor employed by the affected party, its subcontractors or its suppliers.</p>

	Contractor or any sub-contractor.	
Notice of occurrence of the force majeure event	Within two (2) Business Days of the Party becoming aware of the Force Majeure event, it shall notify the other Party setting out a written description of such event and the cause thereof	The notice shall be given within 14 days after the affected Party became aware, or should have become aware, of the Force Majeure event. Otherwise the other Party shall be entitled to compensation.
Notice of expiration of the force majeure event	The Party so affected shall give written notice to the other Party of the ending of that event within two (2) Business Days of becoming aware of the ending of that event.	The affected Party shall give a prompt written notice to the other Party when it is again able to resume performing its obligations.
Obligation of mitigation	The Party or Parties affected by the event of Force Majeure shall use reasonable efforts to mitigate the effect thereof and to fulfil its or their obligations under this EPC Contract.	the contractor shall endeavor to continue performing its obligations so far as reasonably practicable, take all reasonable steps to remedy or abate the Force Majeure and mitigate its effects and keep the Employer fully informed of such steps.
Compensation for mitigation actions costs	Not mentioned	If the contractor incurs additional cost in so doing, the contractor shall be entitled to the amount of such cost without profit.

<p>Consequences (parties' responsibilities)</p>	<ul style="list-style-type: none"> - The Party who has been affected shall be excused from the performance or punctual performance of its obligations for so long as the relevant event of Force Majeure continues. - No nonperformance or delay by either Party caused by the occurrence of any event of Force Majeure shall constitute a breach of the Contract or Give rise to any claim for damages or additional cost occasioned by such occurrence. 	<p>Neither party shall be considered in breach of its obligations under this Agreement or hold liable to the other party for any damages or losses if the performance of such obligations is prevented as a direct result of a Force Majeure event.</p>
<p>Consequences (extension of Time)</p>	<p>Not mentioned</p>	<p>If the contractor is delayed as a result of work suspension due to occurrence of a force majeure event, then it shall be entitled to a time extension.</p>
<p>Consequences (early termination)</p>	<p>Not mentioned</p>	<p>If it is reasonably foreseeable at the time of notice of the Force Majeure event is given that either or both</p>

		Parties will be unable, fully and permanently, to perform their obligations under this Agreement, then upon notice by either Party to the other Party, the Agreement will be terminated.
Consequences (optional termination)	If any event of Force Majeure continues for a period in excess of 120 consecutive or 180 non-consecutive Days, then either Party may terminate this Contract by written notice without any liability upon either of the Parties to the other.	If a Force Majeure event occurs and persists for a period exceeds 180 consecutive calendar days, either party may give to the other party a 28 days' written notice of termination of the Agreement. If, after the expiration of such notice period, the effect of the Force Majeure event continues, the Agreement shall be terminated.
Consequences (payment after termination)	Payment of any amount that shall have accrued to the Contractor prior to the occurrence of the event of Force Majeure.	Within 30 days of termination of this Agreement due to Force Majeure event, the Employer shall pay the Contractor the due amount according to the work performed up to the date of termination.

From the above comparison, it is noticed that the Model Clause could be applied to the "EMAL Administrative Offices and Facilities" contract as both contracts

are dealing with force majeure as a sufficient cause for discharging from contractual liability either partially or totally. However, the Model Clause is discriminated with the following:

- Broader definition and characteristics of force majeure.
- The consequences of no-recipient or late receipt of the notice of force majeure..
- Compensation for actions taken to mitigate force majeure effects.
- Extension of time as a result of force majeure event.
- Early termination in case of inability of performance.

Furthermore, despite the force majeure clause in "EMAL Administrative Offices and Facilities" contract has provided a notice upon the occurrence and upon the end of the event, but the period of each notice is two days only which is a very unpractical short notice.

5 . 3 . 4 Contract No.4 "Girl's Campus of the Islamic University"

The project is in Niamey, the capital of the Republic of Niger. The employer is the Islamic Development Bank and the project has not been awarded to a certain contractor yet as it is still in the bidding stage. The contract is a FIDIC based, 2010 revision which is published as amended version of the Red Book for use by Multilateral Development Banks. The contract was a part of bidding documents which have been received by the bidders for the purpose of submission their offers for the construction of the project. Contract time for completion is nine hundred days starting from the date of issuance the letter of acceptance. The contract is design-bid-build type and the governing law is the law applicable in Republic of Niger. The following table 35 represents the comparison between the force majeure clause of the contract and the developed model clause:

Table 35: Comparison between Contract No.4 Force Majeure Clause and Model Clause

Aspects of Force Majeure	"Girl's Campus of the Islamic University " Force majeure Clause	Force Majeure Model Clause
Definition and characteristics	<ul style="list-style-type: none"> - Exceptional event or circumstance which is beyond a Party's control, - Event that such Party could not reasonably have provided against before entering into the Contract, - Event that could not reasonably have been avoided or overcome. - Event is not substantially attributable to the other Party. 	<ul style="list-style-type: none"> - Exceptional circumstance which is not foreseen and not within the reasonable control of the affected Party. - Circumstance cannot be overcome, prevented or avoided by such Party. - Circumstance that adversely and materially affects the ability of the Party to perform its obligations to the extent that the performance of such obligations, or part thereof, become impossible or unlawful. - The affected Party has taken all reasonable alternative measures and due care in order to mitigate the consequences.
Force Majeure Events	<ul style="list-style-type: none"> - war, hostilities, invasion, act of foreign enemies, - rebellion, terrorism, sabotage by persons other than the Contractor's Personnel, revolution, insurrection, military or usurped power, or civil war, - riot, commotion, disorder, strike or lockout by 	<ul style="list-style-type: none"> - Earthquakes, flood, landslide, tempest, hurricane, typhoon, volcanos, lightning, washout and fire. - Actions of military, invasion, war, hostilities, act of foreign enemies, acts or threats of terrorism, insurrection of military or usurped power, civil war, requisition or compulsory acquisition. - Civil disturbance, revolution, rebellion, insurrection, riot,

	<p>persons other than the Contractor's Personnel,</p> <ul style="list-style-type: none"> - Munitions of war, explosive materials, ionizing radiation or contamination by radio-activity or radio-activity. - Natural catastrophes such as earthquake, hurricane, typhoon or volcanic activity. 	<p>sabotage, vandalism, blockade, explosions and strikes.</p> <ul style="list-style-type: none"> - Ionizing radiation or contamination within the Country, explosive materials, radio activity from any nuclear fuel or nuclear component. - Pressure waves caused by aircraft travelling at sonic or supersonic speeds. - Expropriation, acts or restraints of a governmental body or authority, and failure to obtain a requisite permit by reason of newly imposed statute, law or regulation. - Prolonged unavoidable shortage of energy supplies. - Unusual delay by common carriers. - Epidemic and quarantine.
<p>Exclusion from Force Majeure events</p>	<ul style="list-style-type: none"> - Strike or lockout by persons other than the Contractor's Personnel. 	<p>Strikes by labor employed by the affected party, its subcontractors or its suppliers.</p>
<p>Notice of occurrence of the force majeure event</p>	<p>If a Party is prevented from performing its obligations by Force Majeure, then it shall give notice to the other Party of the event constituting the Force</p>	<p>The notice shall be given within 14 days after the affected Party became aware, or should have become aware, of the Force Majeure event. Otherwise the other Party shall be entitled to compensation.</p>

	Majeure within 14 days after the Party became aware, or should have become aware, of the event.	
Notice of expiration of the force majeure event	A Party shall give notice to the other Party when it ceases to be affected by the Force Majeure.	The affected Party shall give a prompt written notice to the other Party when it is again able to resume performing its obligations.
Obligation of mitigation	Each Party shall use all reasonable endeavors to minimize any delay in the performance of the Contract as a result of Force Majeure.	the contractor shall endeavor to continue performing its obligations so far as reasonably practicable, take all reasonable steps to remedy or abate the Force Majeure and mitigate its effects and keep the Employer fully informed of such steps.
Compensation for mitigation actions costs	Not mentioned	If the contractor incurs additional cost in so doing, the contractor shall be entitled to the amount of such cost without profit.
Consequences (parties responsibility)	The Party shall be excused performance of its obligations for so long as such Force Majeure prevents it from performing them.	Neither party shall be considered in breach of its obligations under this Agreement or hold liable to the other party for any damages or losses if the performance of such obligations is prevented as a direct result of a Force Majeure event.

<p>Consequences (extension of Time)</p>	<ul style="list-style-type: none"> - An extension of time for any delay due to an event of force majeure. - Payment of any incurred Cost, including the costs of rectifying or replacing the Works and/or Goods damaged or destructed by Force Majeure. 	<p>If the contractor is delayed as a result of work suspension due to occurrence of a force majeure event, then it shall be entitled to a time extension.</p>
<p>Consequences (early termination)</p>	<p>If any event or circumstance outside the control of the Parties arises and makes it impossible or unlawful for either or both Parties to fulfil its or their contractual obligations, the Parties shall be discharged from further performance.</p>	<p>If it is reasonably foreseeable at the time of notice of the Force Majeure event is given that either or both Parties will be unable, fully and permanently, to perform their obligations under this Agreement, then upon notice by either Party to the other Party, the Agreement will be terminated.</p>
<p>Consequences (optional termination)</p>	<p>If the execution of the Works is prevented for a continuous period of 84 days by reason of Force Majeure or for multiple periods which total more than 140 days due to the</p>	<p>If a Force Majeure event occurs and persists for a period exceeds 180 consecutive calendar days, either party may give to the other party a 28 days' written notice of termination of the Agreement. If, after the expiration of such notice period, the</p>

	<p>same notified Force Majeure, then either Party may give to the other Party a notice of termination of the Contract. In this event, the termination shall take effect 7 days after the notice is given.</p>	<p>effect of the Force Majeure event continues, the Agreement shall be terminated.</p>
<p>Consequences (payment after termination)</p>	<ul style="list-style-type: none"> - Amounts payable for any work carried out for which a price is stated in the contract; - Any cost was reasonably incurred by the Contractor in the expectation of completing the Works; - The reasonable Cost of removal of temporary Works and Contractor's Equipment from the Site 	<p>Within 30 days of termination of this Agreement due to Force Majeure event, the Employer shall pay the Contractor the due amount according to the work performed up to the date of termination.</p>

From the above comparison, it is noticed that both the "Girl's Campus of the Islamic University", which is a FIDIC based contract, and the Model Clause of force majeure are, to a big extent, similar in dealing with force majeure except for the following:

- The contract did not provide, explicitly, an entitlement to the contractor to be compensated against the incurred costs in mitigating the effects of force majeure. On the other hand, such entitlement of compensation is granted to the contractor upon contract termination for the incurred costs as a result of the effect of the force majeure event itself (not the mitigation of such effect). Such entitlement to compensation is against the consequences of force majeure as a concept in Civil Law which is mentioned in Article 1148 of the French Civil Code. According to such Article, there is no place for compensation when, as a result of a force majeure, the debtor has been prevented from doing what he was obliged to do. Furthermore, referring to Hagedoorn & Hesen (2007) study in the consequences of the force majeure events, in case of termination each party shall carry its own risk. In some cases, the parties might be compensated for the part of work already performed before the date of occurrence of the event constituting the force majeure (Hagedoorn *et al*, 2007). According to such study, the contractor's compensation, in case of termination because of a force majeure event, is limited to the amount of work done up to the date of termination.
- The events of force majeure in the contract did not include the act of government such as expropriation, restraints of authority, and failure to obtain a requisite permit by reason of any newly imposed statute, law, or regulation. The act of government is an event beyond parties ' control and may cause impossibility of executing the project or part thereof.
- Lastly, the contract did not specify the consequences of no-recipient or late receipt of the notice of force majeure.

CHAPTER 6 : CONCLUSIONS

6.1 Overview and Contributions

This research is concerned with the force majeure concept in the construction industry and the importance of drafting a suitably related clause in construction contracts. The main objective of this research is to develop a force majeure model clause to be comprehensive and inclusive of all elements of force majeure including definition, events, obligations and consequences.

In order to achieve the objective of the research, a force majeure model clause is developed based on three research elements: first, the literature review which included identification of the force majeure as a legal concept and its treatment in both civil law and common law legal systems; second, a questionnaire survey that is conducted to investigate the opinion of respondents, who are working in the field of contracts in construction industry, about the force majeure as a concept and the provisions of the force majeure clause that are highly recommended to be included in construction contracts; lastly, a number of contracts the researcher dealt during his professional life.

From the study, it is concluded that force majeure is a civil law concept aiming to excuse the parties of the contract from their obligations upon occurrence of events which are beyond parties control and are neither predictable nor avoidable. Such events might be natural disasters, acts of state or governmental actions, military or civil disturbances, acts of terrorism or war and nuclear catastrophes.

On the other hand, in common law legal system, force majeure is not a term of art. The concept of force majeure will never be considered in the absence of specific contractual terms and provisions. The parties deal with the unforeseen events shall be

to the extent to such provisions that are defined in the contract between them. There are some doctrines in common law that could be similar to some extent to force majeure but in narrower meaning such as the doctrines of impossibility, impracticability, frustration and hardship.

Force majeure event may result in work suspension either partially or totally. It may also result in contract termination if it is clear that fulfilling the contractual obligations becomes impossible or if the duration of the event extends for long period. Neither Party should be held responsible or liable for delay or failure in performing or fulfilling any of its obligations under the contract.

Therefore, a carefully drafted force majeure clause is a highly important tool for decreasing the risk of liability related to the occurrence of an unforeseen events. The most obvious benefit is that the duties of contract parties will be postponed until the end of the event, avoiding any breach and allowing the contractual obligations to be satisfied.

The main contribution of this research is that it develops a force majeure model clause which is compatible with civil law legal system represented in civil codes of several countries and, in the same time, acceptable in common law legal doctrines. Thus such model clause can be applied in a wide range of contracts whatsoever the governing law of such contracts.

The verification of the model is done through interviews with three experts in the field of contract administration in construction industry.

Moreover, the model clause is compared with four construction contracts of mega projects in four different countries. One of the mentioned contracts is a FIDIC based contract, so an opportunity is provided to hold a detailed comparison between the

model and such international standard form of contracts. The comparison results have shown the compatibility of the model clause with civil law and prove that it provides a wide range of the force majeure events along with the obligations of the affected party upon the occurrence of the event and during the period of its continuance. Moreover, the model clarifies the consequences of the force majeure events and the rights of both contract parties thereof.

6 . 2 Limitations and Future Research

The model clause is verified, as previously demonstrated, by experts' assessment. However, the model clause has not been validated as such validation requires incorporating it into future contracts and getting the feedback of its application which will last for long times. It is highly recommended to check the validity of the model clause in future research.

Moreover, the force majeure model clause is created to match the provisions of the civil law legal system and doctrines of common law that are, somehow, similar to the concept of force majeure. Despite civil law and common law are the most famous legal systems worldwide, there are other countries that are not subject to any of them but to other legal systems such as Chinese law which is a mixture of civil law and socialist law used in the People's Republic of China and Indian law which is a hybrid legal system representing a mixture of civil law, common law and customary or religious law. Also there are religious law legal system countries such as Kingdom of Saudi Arabia, Republic of Iran and some northern states in Nigeria. In such countries, Islamic Sharia law is based on legal precedent and reasoning by analogy, and is thus considered similar, to some extent, to common law. A broader study should be conducted to include other legal systems in order to utilize and validate the model on a wider scale.

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APPENDIX A – SURVAY QUESTIONNAIRE

Responses cannot be edited

Force Majeure in Construction Contracts

Date: December 29, 2016.

Dear Participant:

My name is Amr Abu Helw. I am a graduate student at American University in Cairo (AUC) - the program of Master's degree in Construction Engineering. For my thesis, I am examining the concept of force majeure in construction contracts under different legal systems. Because you have a wide experience in contract administration, I am inviting you to participate in this research study by completing the attached survey.

The following questionnaire will require approximately ten minutes to complete. There is no compensation for responding nor is there any known risk. In order to ensure that all information will remain confidential, please do not include any personal information except what is required under the survey. If you choose to participate in this survey, please answer all questions as honestly as possible and return the completed questionnaire promptly. Participation is strictly voluntary and you may refuse to participate at any time.

Thank you for taking the time to assist me in my educational endeavors. The data collected will provide useful information regarding finalizing the thesis. A summary copy of this survey will be emailed to you upon your request. Completion and submission of the questionnaire will indicate your willingness to participate in this study. If you require additional information or have questions, please contact me at the number listed below. If you are not satisfied with the manner in which this study is being conducted, you may contact me.

Sincerely,
Amr Abu Helw
+2-01001751180
amr.abohelo@aucegypt.edu

Section 1: Participant's Information

1.1 Name: *

.....

1.2 E-mail *

.....

1.3 Nationality *

1.4 Current country of residence *

1.5 Bachelor's major *

- Civil
- Architect
- Electrical
- Mechanical
- Construction Management
- Other:

1.6 Graduation year *

- 2016 - 2011
- 2010 - 2006
- 2005 - 2001
- 2000 - 1995
- Before 1995

1.7 Highest level of education have been obtained *

- Bachelor
 - High degree deploma
 - Masters
 - PhD
-

Section 2: Participant's Professional Background

2.1 Current job title *

.....

2.2 Countries, other than Egypt, that you have worked in *

.....

2.3 Category of the current organization *

- Client
- Consultant
- Contractor
- Other:

2.4 Years of experience in construction industry *

- Less than 5
- 5 - 10
- 10 - 15
- 15 - 20
- More than 20

2.5 Years of experience in contracts administration *

- Less than 5
- 5 - 10
- 10 - 15
- 15 - 20
- More than 20

2.6 Which form of contracts have you dealt with *

	Never	Rarely	Sometimes	Often	Always
Standard form of contracts, FIDIC based	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other Standard forms of contracts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tailor made contracts.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2.7 What type of contracts have you dealt with *

	Never	Rarely	Sometimes	Often	Always
Private sector contracts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Administrative contracts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2.8 In your past experience, what was the delivery method of projects *

	Never	Rarely	Sometimes	Often	Always
Design-Bid-Build	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Design-Build (Turn key)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Construction Management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Project Management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Separate Prime Contracts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Build-Operate-Transfer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Public-Private-Partnership	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2.9 In your past experience, what was the legal system of the contracts *

	Never	Rarely	Sometimes	Often	Always
Civi law	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Common Law	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sharia	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Section 3: Force Majeure Concept

3.1 Do you agree that force majeure is considered a public policy theory *

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

3.2 Do you agree that, according to the Egyptian Civil Code, the concept of force majeure and the theory of unforeseen circumstances are different in basis and application *

Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

3.3 According to the Egyptian Civil Code, which of the following concepts are subject to the theory of force majeure and which are subject to the theory of unforeseen circumstances? *

	Concept of force majeure	Theory of unforeseen circumstances	Both of them	None of them
Event is beyond parties control	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unpredictable event	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The event resulted in impossibility of performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The event resulted in excessively onerous obligations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The contract is rescinded as a result of the event occurrence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The obligations are adjusted as a result of the event occurrence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Restoring the economic equilibrium of the contract is one of the event consequences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The debtor was not able to prevent or avoid the event	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Any agreement in contrary is void	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Section 4: Force Majeure in Civil Law and Common Law Legal Systems

4.1 Do you consider the liability of the Contract Parties in Common Law system is more strict than that in Civil Law system? *

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4.2 In your Opinion, Which legal system is considered as a "No-Fault Liability" system (strict/absolute liability) *

Civil Law legal System

Common Law legal System

Both of them

None of them

4.3 In which of the legal systems, inclusion of a force majeure clause in the contract represents an urgent need for the debtor *

Civil Law legal System

Common Law legal System

Both of them

None of them

4.4 Which of the following Common Law doctrines are considered, to some extent, similar to the concept of force majeure *

Physical impossibility

Frustration of Contract

Commercial impracticability

Hardship

All of them

None of them

Section 5: Force Majeure Clause in Construction Contracts

5.1 Do you agree that the following are the aims of incorporating a force majeure clause in construction contracts *

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Risk allocation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Establishment of different remedies for different events	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Intercept the harmful effects of unforeseen contingencies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Notifying the parties of events that may suspend or excuse performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Exonerating a party to a contract from the consequences of failure to perform its obligations caused by supervening events	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Allowing parties to list those events that would be significant enough to them to warrant a change in one or both parties' obligations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Parties may agree on the effect that such events would have on a party's obligation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Less drastic remedies than full discharge under frustration doctrine in common law, such as suspension of obligations, can be agreed to in advance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5.2 In construction contracts, which of the following is usually obligatory to the parties upon occurrence of a force majeure event *

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Notifying the other party of the occurrence of the event	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using good faith efforts to mitigate the impact of the event	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5.3 In your opinion, dealing with force majeure in FIDIC contract is almost the same as: *

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Dealing with force majeure in civil law legal system	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dealing with equivalent doctrines in common law legal system	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5.4 what is the appropriate period, after the expiry of which, the contract could be terminated If the execution of the work is prevented by force majeure *

- 30 days
- 31 - 60 days
- 61 - 90 days
- 91 - 120 days
- 121 - 150 days
- 151 - 180 days
- More that 180 days
- Other:

Section 6: Force Majeure Events and Consequences

6.1 In your past experience, how often force majeure events occur during executing Contracts *

Never	Rarely	Sometimes	Often	Always
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6.2 In your past experience, how often one of the following force majeure events occurs *

	Never	Rarely	Sometimes	Often	Always
Act of God (fires, explosions, earthquakes, drought, tidal waves and floods);	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
War, hostilities or act of foreign enemies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rebellion, revolution, , or civil war	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Commotion, disorder or strikes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Contamination by radio-activity from any nuclear fuel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Acts or threats of terrorism	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Legal prohibition	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6.3 In your past experience, what were the consequences of the force majeure events *

	Never	Rarely	Sometimes	Often	Always
Termination of contract	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Full Suspension of work at site	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Partial suspension of work at site	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
prevention of the performance to a very limited extent	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6.4 In your past experience, what were the remedies of the Contractor as a result of force majeure event occurrence *

	Never	Rarely	Sometimes	Often	Always
Extension of time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cost compensation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Both of them	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
None of them	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6.5 Does drafting a force majeure clause in the contract contribute in reducing the disputes between contract's parties *

Never

Rarely

Sometimes

Often

Always

This form was created inside AUC.

Google Forms

**APPENDIX B – ONGOING CONTRACTS’ FORCE
MAJEURE CLAUSES**

CONTRACT 1: "Two Power Plants in Attaqa and Mahmoudia" EPC Contract

"XV. FORCE MAJURE

- 1st. Neither Party to this Contract shall be responsible for nor deemed to be in default under this Contract on account of any failure or delay in performance under the Contract due to Force Majeure which are causes beyond either Party's reasonable control including, but not limited to the following:
- a. States of strike, riot, revolution, political strife, war or warlike operation.
 - b. Extraordinary natural events such as weather condition prohibiting work, typhoons, earthquakes, fires, or floods.
 - c. Energy shortage or shortage of material resources resulting from energy shortage affecting the Contractor's performance.
 - d. Acts of Government including requirements arising from any laws, rules, affected subsequent to the effective date of this Contract and directly affecting the Contract.
- 2nd. In case of Force Majeure The Party that experiences a failure or delay as a result of Force Majeure, shall promptly notify the other Party of such failure or delay along with reasonable substantiation thereof, including if applicable, a certification from an agency or agencies of the Government.
- 3rd. Both Parties shall continue performance of the remaining obligations hereunder. The Party delayed shall use its best efforts to avoid or remove the cause of the failure or delay and to minimize its effect as quickly as possible. Notification shall be provided to the other Party promptly after the beginning date and ending of Force Majeure effects.

- 4th. Buyer default in obtaining the Construction Permit shall not be considered a Force Majeure.
- 5th. Failure of the Supplier to deliver any Equipment, or portions thereof, due to unavailability shall not be considered to Force Majeure.
- 6th. The Contract shall be terminated by a written notice from GoE to the Contractor if the effect of Force Majeure event continues for a period of ninety (90) calendar days (or any extension thereof, if authorized by the GoE) and an amendment cannot be reached or is not appropriate due to a continuing hazardous condition".

CONTRACT 2: "State of Qatar Public Work Authority – Urbacon Trading and Contracting Company UCC" Design-Build Contract

"19. Special Risks

- Definition of Special Rates** 19.1. In this Clause “Special Risks” means an event beyond the control of the Employer and the Contractor which makes impossible or illegal for a party to perform, including but not limited to:
- (a) War, hostilities (whether war be declared or not), invasion, act of foreign armies, mobilization, requisition, or embargo
 - (b) Rebellion, revolution, insurrection or military usurped power, or civil war;
 - (c) Contamination by radio-activity from any nuclear fuel, or from any nuclear waste from the combustion of nuclear fuel, radio-active toxic explosive, or other hazardous properties of any explosive nuclear assembly or nuclear component of such assembly; and
 - (d) Riot, commotion or disorder, unless solely restricted to employees of the Contractor or of his Subcontractors.

Effect of Special Risk Event	19.2. Neither the Employer nor the Contractor shall be considered in default or in contractual breach to the extent that performance of obligations is prevented by a Special Risk event which arises after the Effective Date.
Contractor's Responsibility	19.3. Upon occurrence of an event considered by the Contractor to constitute a Special Risk and which may affect performance of his obligations, he shall promptly notify the Engineer, and shall endeavor to continue to perform his obligations as far as practicable. The Contractor shall also notify the Engineer of any proposals, including any reasonable alternative means for performance, but shall not affect such proposals without the consent of the Engineer.
Employer's Responsibility	19.4. Upon occurrence of an event considered by the Employer to constitute a Special Risk and which may affect performance of his obligations, he shall promptly notify the Contractor and the Engineer, and shall endeavor to continue to perform his obligations as far as reasonably practicable. The Employer shall also notify the Engineer and the Contractor of any proposals, with the objectives of completing the Works and mitigating any increased costs to the Employer and the contractor.

Payment to Contractor 19.5. If, in occurrence of a Special Risk, the Works shall suffer loss or damage, the Contractor shall be entitled to have included, in an interim Payment Certificate, the Cost of work executed in accordance with the contract, prior to the event of Special risk. If the contractor incurs additional Cost in complying with Sub-Clause 19.3, such Cost shall be determined by the Engineer in accordance with the provisions of Sub-Clause 3.5 and shall be added to the contract Price.

Optional Termination, Payment and Release 19.6. Irrespective to any extension of time, if a Special Risk event occurs and its affect continues for a period of 182 days, either the Employer or the contractor may give to the other a notice of termination, which shall take effect 28 days after the giving of the notice. If, at the end of the 28-day period, the effect of the Special Risk continues, the Contract shall terminate. If the contract is terminated under this Sub-Clause or Sub-Clause 2.3, the Engineer shall determine the value of the work done and:

(a) The amounts payable for any work carried out for which a price is stated in the contract;

- (b) The cost of Plant and Materials ordered for the Works which have been delivered to the contractor, or of which the Contractor is liable to accept delivery; such Plant and Materials shall become the property of (and be at the risk of) the Employer when paid for by the Employer, and the Contractor shall place the same at the Employer's disposal;
- (c) Any other cost or liability which in the circumstances was reasonably incurred by the Contractor in the expectation of completing the Works;
- (d) The reasonable Cost of removal of temporary Works and Contractor's Equipment from the Site and the return of such items to the Contractor's Works; and
- (e) The reasonable Cost of repatriation of the Contractor's staff and labour employed wholly in connection with the Works at the date of such termination;

And issue an interim Payment Certificate in accordance with Clause 13.

**Release from
Performance
under the law**

19.7. If under the law of the Contract the Employer and the Contractor are released from further performance, the sum payable by the Employer to the Contractor shall be the same as would have been payable under Sub-Clause 19.6 if the Contract had been terminated under that Sub-Clause".

CONTRACT 3: "EMAL Administrative Offices and Facilities" EPC Contract

"25 FORCE MAJEURE

25.1 Notification

If either Party is prevented, hindered or delayed from or in performing any of its obligations under this EPC Contract by an event of Force Majeure (as defined in Clause 25.5), then within two (2) Business Days of the Party becoming aware of such event, it shall notify the other Party setting out a written description of the event of Force Majeure and the cause thereof (to the extent known) and as soon as is practically possible thereafter a further written notice setting out:

- (a) Its estimated duration and the estimated time during which the performance of such Party's obligations under this EPC Contract will be delayed;
- (b) Its estimated impact (if any) on the Milestones, the Guaranteed Completion Dates, the Contract Price and on the other obligations of such Party under this EPC Contract; and
- (c) Any areas where costs might be reduced and the approximate amount of such reductions.

The Party who has complied with the requirements of this Clause 25 shall be excused from the performance or punctual performance of its obligations under this EPC Contract for so long as the relevant event of Force Majeure continues and to the extent that such Party's performance is prevented, hindered or delayed. The Party so affected shall give written notice to the other Party of the ending of that event within two (2) Business Days of becoming aware of the ending of that event.

25.2 No Liability

Subject to Clause 16.3(c) (ii), neither Party shall be liable to the other Party for delays caused by Force Majeure, provided such notice as is required above given.

25.3 Mitigation

The Party or Parties affected by the event of Force Majeure shall use reasonable efforts to mitigate the effect thereof upon its or their performance of this EPC Contract and to fulfil its or their obligations under this EPC Contract.

25.4 No Default

No delay or nonperformance by either Party caused by the occurrence of any event of Force Majeure shall:

- (a) Constitute a default or breach of this EPC Contract; or
- (b) Give rise to any claim for damages or additional cost or expense occasioned by such occurrence.

25.5 Force Majeure Definition and Events

(a) The term “**Force Majeure**” shall mean any event beyond the reasonable control of the Party affected by such event, as the case may be occurring after the Commencement Date and which (or the effects of which) is (or are) unavoidable notwithstanding the reasonable care of the Party affected, and shall include, subject to the other provisions of this Clause 25, the following:

- (i) any act of God, the effect of any natural element including any weather conditions of an extraordinary nature or duration, flood, lightning, fire, smoke, cyclone, tornado, earthquake, tsunami or other natural disaster;
- (ii) strikes, works stoppages or other labour disputes or disturbance (including lock-outs) which are wide spread and decreed or

recommended for its members by a recognized contractors' association, of which the Contractor and/or a Subcontractor is a member or to which the Contractor and/or a Subcontractor is otherwise bound:

- (iii) The failure of any Subcontractor to furnish materials or equipment on the dates agreed to if such failure itself due to an event of Force Majeure;
 - (iv) Sabotage, terrorism or act of a public enemy (or threats thereof), civil disturbance (including any acts of any individuals engaged in activities in furtherance of a program of irregular warfare), acts of belligerence of foreign enemies (whether accorded diplomatic recognition or not), war, civil, war , revolution, rebellion or insurrection, or any attempt, threat or civil strike arising therefrom, exercise of military or usurped power, or ant attempts at usurpation of power, invasion, acts of emergency, boycott, blockade, embargo, sanction and riot;
 - (v) Nuclear, chemical or biological contamination;
 - (vi) Any plague or epidemic; and
 - (vii) Pressure waves caused by devices travelling at supersonic speed.
- (b) It is specifically understood that none of the following conditions shall constitute an event of Force Majeure :
- (i) Reasonably foreseeable weather conditions including high ambient temperatures and rain;

- (ii) The failure of any Subcontractor to furnish labour, Services, materials or equipment on the dates agreed to unless such failure is itself due to an event of Force Majeure;
- (iii) General economic conditions and exchange rate fluctuation;
- (iv) The financial condition of the Contractor or any Subcontractor;
- (v) the financial condition of the Company or Contractor; and
- (vi) Any matter, thing or circumstance that the Contractor takes risk in pursuant to this EPC Contract.

25.6 Continuing Force Majeure

In the event that any event of Force Majeure continues for a period in excess of one hundred and twenty (120) consecutive or one hundred and eighty (180) non-consecutive Days then either of the Parties may terminate this EPC Contract by written notice without any liability upon either of the Parties to the other save to the extent that any amount that shall have accrued to the Contractor prior to the occurrence of the event of Force Majeure".

**CONTRACT 4: "Girl's Campus of the Islamic University- Niamey - The
Republic of Niger." Design-Bid-Build Contract**

19. Force Majeure

19.1 Definition of Force Majeure In this Clause, "Force Majeure" means an exceptional event or circumstance:

- (a) which is beyond a Party's control,
- (b) which such Party could not reasonably have provided against before entering into the Contract,
- (c) which, having arisen, such Party could not reasonably have avoided or overcome, and
- (d) which is not substantially attributable to the other Party.

Force Majeure may include, but is not limited to, exceptional events or circumstances of the kind listed below, so long as conditions (a) to (d) above are satisfied:

- (i) war, hostilities (whether war be declared or not), invasion, act of foreign enemies,
- (ii) rebellion, terrorism, sabotage by persons other than the Contractor's Personnel, revolution, insurrection, military or usurped power, or civil war,
- (iii) riot, commotion, disorder, strike or lockout by persons other than the Contractor's Personnel,
- (iv) munitions of war, explosive materials, ionising radiation or contamination by radio-

activity, except as may be attributable to the Contractor's use of such munitions, explosives, radiation or radio-activity, and
(v) natural catastrophes such as earthquake, hurricane, typhoon or volcanic activity.

19.2 Notice of Force Majeure If a Party is or will be prevented from performing its substantial obligations under the Contract by Force Majeure, then it shall give notice to the other Party of the event or circumstances constituting the Force Majeure and shall specify the obligations, the performance of which is or will be prevented. The notice shall be given within 14 days after the Party became aware, or should have become aware, of the relevant event or circumstance constituting Force Majeure.

The Party shall, having given notice, be excused performance of its obligations for so long as such Force Majeure prevents it from performing them.

Notwithstanding any other provision of this Clause, Force Majeure shall not apply to obligations of either Party to make payments to the other Party under the Contract.

19.3 Duty to Minimize Delay Each Party shall at all times use all reasonable endeavours to minimise any delay in the performance of the Contract as a result of Force Majeure.

A Party shall give notice to the other Party when it ceases to be affected by the Force Majeure.

19.4 Consequences of Force Majeure If the Contractor is prevented from performing its substantial obligations under the Contract by Force Majeure of which notice has been given under Sub-Clause 19.2 [Notice of Force Majeure], and suffers delay and/or incurs Cost by reason of such Force Majeure, the Contractor shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:

- (a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and
- (b) if the event or circumstance is of the kind described in sub-paragraphs (i) to (iv) of Sub-Clause 19.1 [Definition of Force Majeure] and, in the case of sub-paragraphs (ii) to (iv), occurs in the Country, payment of any such Cost, including the costs of rectifying or replacing the Works and/or Goods damaged or destructed by Force Majeure, to the extent they are not indemnified through the insurance policy referred to in Sub-Clause 18.2 [Insurance for Works and Contractor's Equipment].

After receiving this notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.

19.5 Force Majeure Affecting Subcontractor If any Subcontractor is entitled under any contract or agreement relating to the Works to relief from force majeure on terms additional to or broader than those specified in this Clause, such additional or broader force majeure events or circumstances shall not excuse the Contractor's non-performance or entitle him to relief under this Clause.

19.6 Optional Termination, Payment and Release If the execution of substantially all the Works in progress is prevented for a continuous period of 84 days by reason of Force Majeure of which notice has been given under Sub-Clause 19.2 [Notice of Force Majeure], or for multiple periods which total more than 140 days due to the same notified Force Majeure, then either Party may give to the other Party a notice of termination of the Contract. In this event, the termination shall take effect 7 days after the notice is given, and the Contractor shall proceed in accordance with Sub-Clause 16.3 [Cessation of Work and Removal of Contractor's Equipment].

Upon such termination, the Engineer shall determine the value of the work done and issue a Payment Certificate which shall include:

- (a) the amounts payable for any work carried out for which a price is stated in the Contract;
- (b) the Cost of Plant and Materials ordered for the Works which have been delivered to the

Contractor, or of which the Contractor is liable to accept delivery: this Plant and Materials shall become the property of (and be at the risk of) the Employer when paid for by the Employer, and the Contractor shall place the same at the Employer's disposal;

- (c) other Costs or liabilities which in the circumstances were reasonably and necessarily incurred by the Contractor in the expectation of completing the Works;
- (d) the Cost of removal of Temporary Works and Contractor's Equipment from the Site and the return of these items to the Contractor's works in his country (or to any other destination at no greater cost); and
- (e) the Cost of repatriation of the Contractor's staff and labour employed wholly in connection with the Works at the date of termination.

**19.7 Release from
Performance**

Notwithstanding any other provision of this Clause, if any event or circumstance outside the control of the Parties (including, but not limited to, Force Majeure) arises which makes it impossible or unlawful for either or both Parties to fulfil its or their contractual obligations or which, under the law governing the Contract, entitles the Parties to be released from further performance of the Contract, then

upon notice by either Party to the other Party of such event or circumstance:

- (a) the Parties shall be discharged from further performance, without prejudice to the rights of either Party in respect of any previous breach of the Contract, and
- (b) the sum payable by the Employer to the Contractor shall be the same as would have been payable under Sub-Clause 19.6 [Optional Termination, Payment and Release] if the Contract had been terminated under Sub-Clause 19.6.