



# **A study of factors causing cancellation or postponement of construction projects in the UAE**

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## **Declaration**

I Thuraya Abdul Khaliq Al Khoori declare that this is my own work and its contents are original. Therefore, use of tables, words, text and ideas by other authors need have been acknowledged and a list of reference provided at the end of it.

## **Dedication**

I dedicate this dissertation to my family for their emotional support and love that enabled me to work with zeal in my studies.

## **Acknowledgements**

This study has been successfully completed with assistance from others. I am grateful to my supervisor Professor Ashly who offered unwavering guidance throughout. Special thanks to the staff members for using their projects as case studies as the cases made this dissertation to be successful. My gratitude is also extended to the office staff at the University for checking my dissertation write up and binding it.

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## **Abstract**

This dissertation examines the factors that cause cancellation or postponement of construction projects within the UAE. Price fluctuation in the price of construction materials is one of the factors that have contributed to cancellation or postponement of projects in the UAE. This has motivated both contractors and developers to finish the projects on time. Additionally, inflation and economic instability has caused the UAE construction sector to experience financial difficulties. The objectives include: To outline the importance of the construction industry and the effects it has on the Abu Dhabi economy, analyze factors that result in postponement or cancellation of construction projects, identify various impacts of the cancellation or postponement and identify suitable mitigation measures. In order to attain these objectives, four different case studies were used which examines the effects of a number of factors on the UAE construction industry. In conclusion, from the information gathered, it is evident that the UAE construction has been impacted negatively by factors such as inflation, fluctuation in the price of construction materials, and poor management resulting in the cancellation or postponement of projects.

## Arabic abstract

تقلب أسعار مواد البناء هو أحد العوامل الأساسية التي ساهمت في الغاء أو تأجيل المشاريع في دولة الامارات العربية المتحدة . وهذا قد حفز المقاولين والمطورين للانتهاء من المشاريع في الوقت المحدد . بالإضافة إلى ذلك ، تسبب التضخم وعدم الاستقرار الاقتصادي بمواجهة مصاعب مالية في قطاع البناء في دولة الامارات العربية المتحدة . وتشمل أهداف الدراسة : بيان أهمية قطاع البناء والتشييد وأثاره على اقتصاد أبوظبي ، تحليل العوامل التي تؤدي إلى تأجيل أو الغاء مشاريع البناء، والبحث عن الآثار المختلفة لالغاء أو تأجيل مشاريع البناء وتحديد تدابير التخفيف المناسبة لهذا الوضع. بغية تحقيق الاهداف المذكورة، تم درسة أربع حالات مختلفة لدراسة اثار عدد من العوامل المؤثرة على بناء دولة الامارات العربية المتحدة. وتم جمع المعلومات المقدمة عن طريق البحث في الكتب، والمجلات والصحف. وفي الختام استنادا الى المعلومات التي تم جمعها ، من الواضح أن قطاع البناء في دولة الامارات العربية المتحدة قد اثرت عليه سلبا عدة عوامل مثل التضخم والتقلب في أسعار مواد البناء ، وسوء الادارة التي أسفرت عن الغاء أو تأجيل المشاريع.

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## **CHAPTER ONE: INTRODUCTION**

Cancellation or delays to construction projects in the UAE is a critical aspect of the industry that does not only exacerbate costs but also the term. In the construction industry both time and cost are important not only for the contractors but also for clients and failure to manage these considerations may result in project postponement or cancellation. Moreover, in situations where there is delay, the cost and time taken before completion of the project normally increases. The purpose of this dissertation is to investigate factors that may result in postponement or cancellation of construction projects in the UAE and to identify various ways of minimizing these problems. In addition, the study will examine the effects of project cancellation or postponement as well as various ways in which the postponement or cancellation of the projects can be avoided.

This study is important for the UAE construction industry as it will assist them with managing factors that are likely to result in project cancellation or postponement. The government will also benefit from this particular study in that it will be able to use the recommendations to inform and develop policy.

### **Rationale for this particular study**

The construction industry is essential to the vitality of the economy of any country and UAE is not an exception. According to Shehu & Akintoye (2010, p.79) the construction industry contributes to the economy of a country in a number of ways. The industry does not only provide employment opportunities but also assists in reducing the level of unemployment and building the infrastructure of the country. Moreover, governments all over the world invest large amounts of money in improving the infrastructure in their countries. The UAE has been a desert for a considerable period of time and recently has been transformed into modern cities with road networks and buildings that meet international standards as well as connecting the country to other parts of the world via

ports and airports. Additionally, schools, malls, residential units and luxury hotels have been constructed in the last three decades (Cole, 2008, p. 61).

Consequently, given that the construction industry is responsible for boosting the economy of a country, likewise if projects are not completed or cancelled for one reason or another, the effects are likely to be negative for the economy of the country (Cole, 2008, p. 65). Whenever construction projects are impeded, there is an attendant likelihood of required resources accruing thus hindering the process of improving the general performance of projects already under construction. As a result of increased time duration, the project is likely to experience negative impacts with serious financial repercussions. In addition to that, whenever projects are postponed or cancelled, it may also have a number of negative impacts on contractors, clients and the economy. The effects may be damaging on safety, cost, time or quality (Roderick, 2006, p. 79). Therefore, it is important to point out that causes and effects of cancellation or postponement of construction projects are not exclusively the concern of construction project managers but also have implications for the contractors who must seek to understand the situation and take the necessary prevention measures. Shehu & Akintoye (2010, p. 122) point out that the causes are likely to result in additional cost or time.

Overrun and making this explicit may assist constructors to place necessary actions in place with an aim of negating the identified factors that result in construction project postponement or cancellation. A case study by Roderick (2006, p. 90) indicated that cancellation or postponement of construction projects are primarily a result of client-related factors and in this case project managers are in a position to provide a number of remedies that can easily avert the negative impacts of the identified problems (Roderick, 2006, p. 78).

## **Reasons/ objectives for carrying out the study**

Even though there have been a number of studies on the cancellation or postponement of construction projects in UAE, there are few which have tackled the factors, impacts and methodologies in UAE as well as the factors resulting in cancellation or postponement of projects already in progress. There is an urgent need for conducting a comprehensive study on the common factors that result in cancellation or postponement of construction projects in particular geographical regions and in this case, the Emirate of Abu Dhabi. Despite Abu Dhabi reporting a number of construction projects being either postponed or cancelled, no studies have been conducted to highlight the aforementioned issue, and hence the value of conducting this particular study.

## **Aim**

The aim of this current study is to analyze the factors that cause cancellation or postponement of construction projects, effects and mitigation methodologies for preventing future cancellation or postponement of the projects within the UAE and, in particular, the Abu Dhabi region. In addition, the aim is to draw a number of recommendations with the intention of improving the current condition of the industry. In line with this overall aim, the objectives stated below have been established to achieve it.

## **Objectives**

- To outline the importance of the construction industry and the effects it has on the UAE economy.
- To analyze factors that result in postponement or cancellation of construction projects in the UAE
- To identify various impacts of the cancellation or postponement of construction projects in the UAE
- To identify suitable mitigation measures for the postponement or cancellation of construction projects.

## **Hypothesis**

Construction projects in the UAE are likely to be completed within the established time frame and the set budget if factors resulting in project postponement or cancellation are effectively dealt with and managed

## **Proposed research methodology**

This dissertation research study uses case studies to address the aim and objectives. The case studies have been selected in line with the issues identified in the literature review. The case studies involve examination of infrastructure projects either postponed or cancelled for one reason or the other. There is a case study examination of the factors that resulted in cancellation or postponement of projects in addition to the impact of the cancellation or postponement on contractors, clients, developers, the overall economy and other parties involved in the project directly or indirectly.

## **CHAPTER TWO: LITERATURE REVIEW**

### **Background information about construction projects in UAE**

The UAE is regarded as one of the fastest and the largest economies in the Middle East region. This is because the country has experienced great investments in the construction industry sector emerging from both the private and the public enterprises for the last decade. According to research carried out by Ahsan & Gunawan (2010, p. 68) the construction industry in the UAE has expanded greatly and outpaced the construction industry in Saudi Arabia. This growth has resulted in becoming the largest construction industry in GCC region based on the 2008 report. According to a report published in 2008 by the HSBC Global Research Division (2009) 20% of the Arab construction industry is owned by the UAE. Adel & Martin (2009, p. 23) add that despite the slow growth that was recorded in mid 2009 as a result of the global financial setbacks, the industry recorded high growth rates between 2007-2009 a factor that contributed to approximately 8% of the GDP of the region in 2009.

According to Adel & Martin (2009, p. 23) the construction industry in UAE started in Dubai in the early 1950s. This is when Sheikh Sayed Bin Maktoum and Rashid who was the son made a decision to change Dubai by building permanent structures in Dubai for the purposes of coastal shipping. This made them to launch a project which was known as Dubai Creek Improvement Project. Ahsan & Gunawan (2010, p. 70) adds that the aforementioned project was constructed at a cost of £600,000 by funding from Creek bonds which were purchased by the richest merchants from the region at 6% interest while the secured loan was obtained from the Bank of Kuwait.

Ahsan & Gunawan (2010, p. 72) point out that in the late 1950s, Shakhbut Bin Sultan who was the ruler of Abu Dhabi during that time was in favor of the idea of the Western Oil Corporation an aspect that enabled him to earn approximately \$70 million annually in

the 1960s. It is important to note that the expansion of the construction industry in UAE can be attributed to increased revenues from the oil sector (Fenton, 2009, p. 2). This was particularly evident during the reign of Sheikh Zayed Bin Sultan who established huge construction projects in the region whereby he built not only houses but also roads, hospitals and schools. However, the expansion of the industry came into being during a period of economic development which occurred in the early 1990s. This development period resulted in 9% growth in GDP within the country. According to a report written by Adel & Martin (2009, p. 24), in the year 2005, the output of the construction industry in UAE increased as compared to other years and other countries.

## **Current situation of the UAE construction industry**

In the current economic situation of UAE construction industry, the bid for huge contracts are on the increase an aspect that have made contractors to argue that it is important for the clients to share any risks involved in the construction industry so that they can remain competitive. According to a study carried out by Ibbs (1997b, p. 308), the element of including the price fluctuation clause in a construction contract may be beneficial in curbing projects cancellation or postponement. Nonetheless, if the contract is drawn using the prices that the contractor was charged as the contract was being written instead of using high sum fixed-price which has contingencies which are speculative in nature, this enables the client to save on expenses (Kumaraswamy, Miller & Yugeswaran, 1998, p. 283).

## **The Macro environment**

Harris, (2008) adds that with regards to drafting the provision in the price fluctuation clause, it is important for the parties involved to consider not only the unit price of the materials required but also to categorize the materials that are considered to be volatile. Robert (2005, p. 21) also adds that the clause should dictate that the owners or the clients are liable for an increase in the prices of construction materials. This is likely to avoid cancellation or postponement of construction projects as there is the possibility of increasing the total sum of the contract. Harris, (2008, p. 71) adds that a well drafted and sensible clause will assist in avoiding construction disputes which are likely to result in

cancellation or postponement of construction projects as an increase in the prices of construction can be easily identified. Consequently, the clause should also highlight the circumstances which may result in an increase in the total sum of the construction in addition to identifying the type of documents supporting the change. The clause should highlight the duration of the contract and its total price.

However, for successful contractors who have succeeded in negotiating clauses pertaining to price fluctuations, there are a number of issues which have to be tackled. These include a number of documentation protocols and a series of notices which they have to strictly follow so as to avoid false accusations which may otherwise lead to construction disputes (Kumaraswamy, Miller & Yogeswaran, 1998, p. 283).

### **Construction Projects (pre-contract)**

A study carried out in the UAE, and in particular Dubai, by Robert (2005, p. 64) further observed that the contractors need to establish and maintain a long-lasting relationship with suppliers so as to avoid running out of construction materials an aspect that can contribute to the postponement or cancellation of certain projects. This is important as suppliers can be of great help to the constructors in circumstances wherein there is unavailability or an increase in the price of the construction materials. However, Ibbs (1997b, p. 3011) in his study argues that even if there is establishment of supply chains that are reliable there is still a need for contractors to ensure that all commitments obtained from the chain suppliers are a reflection of their duties to their clients. Furthermore, the quotation from the suppliers should be scrutinized as there is a possibility that they could give bids that increase cost or which do not disclose an aspect that may leave the contractors not wanting to pick up the tab.

Moreover, it is essential for foreign contractors who are working from their countries of origin to be familiar with the requirements of the UAE construction market. This will prepare them to be in a position to react to any kind of development that could impact on

the prices of construction materials resulting in the cancellation or postponement of projects. Robert (2005, p. 34) further adds that if the foreign contractors are conversant with the UAE construction market, they are likely to purchase the required materials in advance. However, advanced purchase can result in challenges such as problems with cash flow in addition to incurring costs pertaining to security and storage space if the materials have to be stored for a considerable period of time.

Moreover, a number of UAE companies are currently looking for more affordable prices beyond their regions of operation instead of dealing with local prices of construction materials (Nael, 2008, p. 56). Studies have further indicated that contractors in UAE, and particularly those in Dubai, have opted for construction projects which have shorter programs in order to avoid cancellation or postponement of the same. According to Robert (2005, p. 16) this can further impact on regional development and growth and thus it is important for organizations involved in the construction work to be in a position to take on new construction practices in order to avoid such circumstances.

## **Reasons for cancellation or postponement of construction projects in UAE**

According to the report released by Faridi & El-Sayegh (2006, p. 1168) the number of construction projects postponed or cancelled in the UAE increased by approximately \$170 billion in August 2002 an aspect that gave a clear indication of the industry had a long way to go before being fully established. This increase is evident in the MENA construction project tracker which reported approximately 13%. The same report further indicates that approximately 56% of the postponed or cancelled construction projects were specifically from the UAE region. Nonetheless, the boom regarding sale of the property in the UAE came to an end in 2008 (Ahsan & Gunawan 2010, p. 72). The reason for this is that the price of property in Dubai fell by approximately 60% an aspect that forced a high percentage of developers to abandon on-going projects. For instance according to the HSBC Global Research Division (2009) Nakheel who is a famous Palm

developer had no option but to write-off a project that was valued at AED 78.6 billion as a result of the property crises. Other developers also highlighted the aforementioned aspect as the main reason why they had to abandon construction projects Faridi & El-Sayegh (2006, p. 1167). Moreover, according to the Citi report, the projects that were either put on hold or cancelled in the main market of MENA added up to approximately \$1.69 trillion in the month of August only and the situation was not only blamed on the constructors but also on the clients. The next section will discuss the possible causes for the postponement or cancellation of construction projects in the UAE.

A major reason for the postponement or cancellation of the construction projects is the element of recession which affected the construction industry not only in UAE but all over the world. According to the information provided by the HSBC Global Research Division (2009) it is not easy for clients to obtain enough finances for the completion of the projects. However, according to Braimah & Ndekugri (2008, p.790) the most affected projects were those that were being sponsored and financed by private companies. These private companies failed to maintain the liquidity level which in one way or the other resulted in the exacerbation of their existing financial problems. In UAE a number of projects which were funded by the government were also negatively affected as a result of financial difficulties an aspect that has led to their cancellation, postponement or abandonment. Braimah & Ndekugri (2008, p.791) adds that a number of construction projects have not only been postponed but also cancelled and abandoned. Furthermore, it is evident that the rate of the insolvency has increased greatly and this has led to workers in the construction industry to losing their jobs.

In the construction industry, postponement or delays are classified in a number of categories which are made on the basis of magnitude, causes and nature (Adel & Martin 2009, p. 3). Additionally there are concurrent delays, excusable, concurrent delays, compensable and non-compensable delays (Faridi & El-Sayegh 2006, p. 1170). In general terms there are a number of reasons for the postponement of construction projects in UAE. One of the reasons is lack of funds to pay the constructors as constructors are usually not in a position to continue working without any payment. Secondly, the delays or abandonment of the construction projects in UAE can be attributed to variation of

orders being introduced by the clients thus encouraging the constructors to abandon, cancel or postpone the whole project. Another reason for the cancellation, postponement or abandonment of projects can be attributed to poor planning or delays in both approving and reviewing drawings, low productivity of the hired workforce, mismanagement and finally difficulties in cash flow and finance (HSBC Global Research Division, 2009).

According to Adel & Martin (2009, p. 21) the cancellation or the postponement in the completion of the construction projects can result from the constructors failing to perform in an efficient manner thus resulting in the project being cancelled by the client or the project being delayed for a long period of time (Braimah & Ndekugri 2008, p. 796). Additionally, a number of researchers have highlighted drawing approvals and poor preparation of the same as one of the factors that causes postponement or cancellation of projects. In some circumstance the consultants issue incomplete drawings to the constructors an aspect that results in a project being postponed or cancelled (Faridi & El-Sayegh 2006, p. 1167).

Some important aspects may be missing in the drawings but this can be discovered after the project had already started and the constructors may be forced to cancel or postpone the construction when this is discovered in the late stages of the construction thus resulting in project postponement (Faridi & El-Sayegh 2006, p. 1169). Adel & Martin (2009, p. 7) further added that it usually takes a considerable period of time to obtain the required information, an aspect that results in projects being postponed as the aforementioned element is likely to affect negatively on the progress of the work. Faridi & El-Sayegh (2006, p. 23) conducted a study on the reasons why projects were cancelled, there are postponements of projects in the UAE although they failed to mention the reasons for the cancellation of the projects this study is still essential for a better understanding of the present study.

Another study carried out by Assaf and al He-hejji (2006, p. 67) on construction projects in UAE produced 73 possible causes of delays in construction projects in the UAE and Saudi Arabia. One of the reasons for the postponement of construction projects that were highlighted by the authors included: delays in the payment of the interim, the works being awarded to the lowest bidder, lack of competent human resources, shortage of labor and cancellation of the already approved design material which not only results in postponement of projects but also cancellation of some (Adel & Martin 2009, p. 10).

## **Fluctuation in the prices of the construction materials**

According to the report published by Adel & Martin (2009, p. 10) there has been fluctuation in the cost of construction materials an aspect that causes confusion in the construction industry and results in some projects being postponed or cancelled. According to the report released by the Emirates Department of Planning and Economy, in 2008, steel prices increased in the year 2006 and 2007 causing a number of construction projects to be cancelled or postponed. As a result of the price fluctuations in steel, a number of individuals decided to invest in the steel industry rather than the construction industry, an aspect that resulted in a number of projects being cancelled or postponed. However, this meant that the existing steel market became overcrowded as the supply exceeded demand (Roberts, 2009, p. 30). Based on the study carried out by Davies (2008, p.56) it was noted that global reduction in the construction industry, in addition to the existing stockpile in inventory, resulted in more pressures on the price of construction materials. This impacted positively on the projects whose completion dates were far ahead or yet to be started but not on those which were in progress as they were to be cancelled or postponed until the prices of steel reduced considerably. Raman (2008, p. 56) also concurred with Davies and pointed out that the prices of the construction materials in UAE motivated constructors to postpone or cancel construction projects.

According to a study carried out by Assaf and al He-hejji (2006, p. 67) adjusting price clauses in construction contracts will curb price fluctuation of construction materials.

This is a matter of concern due to the fact that the price of construction materials have remained high and thus impacted on the industry negatively. Studies have highlighted reasons such as increase in the price of oil as one of the causes of price fluctuation of construction materials. Regardless of the reason, it is important that both the contractor and the developer are protected against any kind of price fluctuation to avoid cancellation or postponement of business projects as they impact negatively on the construction industry. According to a study carried out by Kumaraswamy, Miller & Yogeswaran (1998, p. 283) one way of providing protection to the contractor or the developer is by establishing price fluctuation clauses in the construction contracts. The UAE construction industry has been affected by the increase in the prices of the construction materials between 2006 and 2008 and these increases resulted in the postponement of some projects. According to Assaf and al He-Hejji (2006, p. 69) due to the fact that contractors always predict the likelihood of the market prices increasing, they are likely to postpone the project with the assumption that the prices of the materials are likely to decrease.

Additionally, there is no security that is issued by the price escalation clause in a number of existing contractors in the UAE an aspect that means contractors are exposed to increasing prices of construction materials. Thus, bidding and financing the projects becomes a problem resulting in some contractors cancelling or postponing projects that are already in progress. Moreover due to the fact that UAE depends on importing construction materials which are expensive in nature, the possibility of projects being cancelled or postponed is usually high. This renders the sector vulnerable in particular to global economic shocks due to the fact that the sector depends heavily on imported building materials (Morgan 2008, p. 56). In addition to that issue, the capability and capacity of UAE to produce construction materials for its own domestic consumption is limited as a result of the country lacking a strong industrial base. According to a study carried out by Morgan (2008, p.89) expansion in the construction industry resulted in the volume of the materials being imported to increase by approximately nine million tonnes and 1.6 million of tonnes of steel and cement in 2007. Studies further indicate that Dubai is number nine among the countries that imports steel.

There was a stable period of development which seemed unstoppable in the construction industry for a number of years. Developers in UAE who initially made high profits, developed value and iconic projects such as Palm Jumeirah, Dubai Mall, Burj Khalifa and Burj al Arab among others. The constructors of the aforementioned projects were forced to postpone the projects that were already in progress as a result of financial crises. According to Sulayen (2008, p.89) Nakheel who is a key developer reported that the organization managed by him is reducing some of the projects as a result of global economic slowdown. Commentators from Nakheel further added that the construction industry had experienced global negative movement in addition to the fact that there was no alteration in the UAE's fundamentals. The same pertained to the existing contractors their business objectives led them to cancel or postpone construction projects which were in progress. Samman (2009, p. 40) also added that the construction projects in UAE have been impacted negatively by the existing economic crisis resulting in projects that are valued at \$275 being identified as either cancelled or suspended.

Warnock (2009, p. 67) had a different perception on the same. According to Warnock (2009, p. 67) even though some project have been postponed or suspended, the percentage of projects which are in progress is high. However, despite a number of projects within UAE being cancelled or postponed as a result of the economic crisis, the activity level within the Emirates is still the envy of a number of other countries. This means that despite the market not growing as fast as was expected, it is still regarded as one of the most lucrative markets in the world. The table below is an illustration of projects which were cancelled or put on hold in UAE.

<b>Name of the project</b>	<b>The status of the client</b>
Nakheel harbor and tower	By Nakheel postponed
Al Salam City 8200 Al Rajhi Group	By Tameer holdings postponed
Asia-Asia Hotel 3270	By Tatweer suspended
Al Salam City (Phase 1) 2700 Al Rajhi	By Tameer holdings postponed

Group	
Dolphin City 1700	By emirates German group on suspension
Aqua Dunya (Dubvailand): Phase 2 950	By Aqua Dunya postponed
Aqua Dunya (Dubvailand): Phase 1 950	
Nad El Sheba Racecourse 1300	By Meydan LLC Cancelled
Redevelopment of Mina Rashid 1000	By Nakheel postponed
Cactus Theme 420	By Nakheel postponed
Canal Point 137	By Al Fara'a Properties on suspension
Sienna Square	By 200 Pilkington Emirates Cancelled
Falcon City of Wonders (Dubailand) 680 ETA Star	By ETA Star cancelled
Anara 800	By Tameer Holding On hold

Source: HSBC Global Research 2008

### **Improper selection of construction projects**

According to a study carried out by Assaf, Al-Khalil and Al-Hazmi, (1995, p. 23), improper selection of projects further results in the postponement or cancellation of projects. Additionally, a construction concept that is not easily applicable hinders the success of a project. A top management that is not supportive in nature also results in projects being unsuccessful. In regard to this it is essential for the top management to be in agreement on the selected actions to be applied in the construction industry and take proper action in case of any dispute. A study carried out by Harris (2008, p. 67) pointed out that lack of an adequate system of control and planning often results in an imbalance

between technical, schedule and cost performance. Hence the cancellation or postponement of projects within UAE can be attributed to misuse of management techniques which negatively impacts on the success of the construction projects. Other factors considered as the key causes for cancellation or postponement of construction projects are poor identification and understanding of needs of the end user and the client

Based on the aforementioned study, if unrealistic objectives are set, there are likely to be schedule overruns and huge costs which may further result in some projects which are already in progress to be postponed. Hence, it is important to note that performance, structure and functions of all the parties and individuals involved in the project in addition to a lack of an appreciation of change and dynamics lead to cancellation or postponement of construction projects. Kumaraswamy, Miller & Yogeswaran (1998, p. 286) in their study highlighted the effect of poor control and monitoring at the implementation stage as the key source of cancellation or postponement of construction projects in the UAE. As a result of constant cancellation and postponement of mega construction projects in the UAE, the management of the construction industry has been blamed for ineffectiveness and inefficiency. Hence a number of researchers have carried out studies with the aim of defending and improving the discipline of construction management. Assaf, Al-Khalil and Al-Hazmi, (1995, p. 26) carried out research to identify possible causes of construction projects cancellation or postponement and found out that the politics of the clients, ineffective communication, and lack of respect for other parties involved in the industry are some of the reasons. The same findings were highlighted by others who found that lack of communication, poor management and constant change of authority are some of the factors that results into postponement or cancellation of construction projects in UAE.

## **Impacts of cancellation/postponement of construction projects in the UAE**

### **Developers refusing to pay**

According to a study carried out by Hamad Bu Amim (2009, p. 78) a number of construction contractors in the UAE have raised claims that both government and private developers owe them billion of Dirhams. This proves that there is a big problem in the construction industry as a result of lack of financial resources an aspect that has lead to some developers not being in a position to meet their financial obligations to the contractors, suppliers and even key sub contractors. This causes the existing relationship between contractors and developers to be tarnished. According to Jamal (2008, p. 23) lack of liquidity results in the construction industry being paralyzed an aspect that further results in the relationship between the developers and the contractors to become frayed. Jamal further added that even the biggest associations within the construction industry have taken a financial hit due to the fact that there is lack of liquidity in the construction market. The aforementioned problem was so evident in the first few months of 2008 as a result of the value of real estate falling and succumbing to the global financial crisis. A higher percentage of developers have tried to sell the new properties an aspect that has impacted on both revenues and returns which results into developers experiencing cash flow related problems.

### **Contractors not making the payments**

A failure to inject any form of liquidity in the market results in developers failing to obtain enough cash that will make it possible for them to be in a position to pay their contractors. The knock-on-impact on contractors is that they may not be in a position to pay their valued suppliers and subcontractors and even their employees. The consequence is for this to impact negatively on the construction industry as some projects will either be postponed or cancelled. The contractors in the UAE have their payment terms

stipulated on FIDIC form of contract which states that the engineers should be paid within 28 days after the certification while the employer should make the payment after 30 days (Hamad Bu Amim, 2009, p. 78). However, contractors' payment to the suppliers and the developers are usually made on a back-to-back basis and therefore they are only in a position to receive the payment after the contractors have been paid by the client. Therefore lack of finance in the construction industry does not only incapacitate contractors and developers but also suppliers and subcontractors. Additionally, as a result of the construction industry failing to function efficiently and at its full capacity, it further results in another negative impact on the country economy which is job loss.

## **Job loss**

According to McCaig (2008, p. 56) as a result of the real estate delivery slowing down, the migrant workers who form the workforce of the UAE have been affected negatively. Saleem (2009, p. 38) further added that postponement, cancellation or suspension of construction projects in addition to developers being not in a position to pay the suppliers, contractors and subcontractors as a result of lack of finances causes unemployment within the country's population. Furthermore, a high percentage of construction companies in UAE have responded to the aspect of economic crisis not only through recruitment freezes but also through staff cuts. Hamad Bu Amim (2009, p. 78) in his study further points out that employees from the Asian continent were affected greatly due to the fact that they form the larger part of the UAE population. Consequently, the cancellation or shelving of the construction projects by the developers resulted in loss of business by the developers. This causes the developers not to have any other option than making some positions within their companies redundant with an aim to reduce the existing costs to a level that is sustainable (Saleem, 2009, p.78). According to a study carried out by Suleyam (2008, p. 45), in 2008 Nakheel had laid off approximately 500 employees which translated to 15% of its total workforce. When contacted about the reasons for taking the action, Nakheel's management defended the company's action arguing that even though the decision was regrettable they were forced to do so in order to meet the operational requirements which rely on market demand. For the company to

keep on track with their outlined objectives of matching both the demand and supply in a manner that is effective, it announced the merger of a number of projects and placed them under one management structure. The decision caused redundancies within the organization an aspect that resulted in a further loss of jobs. Sambridge (2008, p. 47) further added that in Dubai an additional 3,000 individuals lost their jobs within a span of three months due to the effects of the global financial crisis.

However, it is important to take note that the UAE government has not remained silent on the issue but rather taken various actions to minimize the effects of redundancies especially on nationals in the workforce, for instance the government has advised the construction companies that have been downsizing to target expatriates first. Nonetheless, according to Roberts (2009, p. 17) making termination not a feasible option has meant that employers have become more cautious in hiring nationals. It is evident that as a result of a high percentage of employees being laid off in UAE and in particular in the construction industry, the effects of the financial crisis has been greatly felt in the country's economy. The table below illustrates the staff laid off in various construction companies as a result of the financial crisis

<b>Name of the company</b>	<b>Number of people laid off</b>
Nakheel properties	500
Omniyat properties	69
Al Shafar	1000
Damac	200
Dulsco	800
WS Atkins	170

Tamweer	180
Tatweer	100

Source: Lynne Roberts: Gulf News, January 16, 2009

According to Roberts (2009, p. 43) human resources are essential for every organization and loss of employees in the construction sector as a result of the financial crisis is likely to result in it being more of a problem that may not be easy to reverse in the future.

### **Contactors regarding financial crisis as an opportunity**

Some contraction companies have viewed the economic crisis as an opportunity to redirect or slowdown their operations, review the organization's strategy, refocus and change in line with the emerging volatile market. Certain organizations have taken this opportunity not only to refine but also define their business opportunities. McCaig (2008, p. 71) quoting Dutco Balfour Beatty general manager pointed out that even though 2009 looked promising, it is important for the Dubai economy to reflect on the effects of financial crisis. The manager went further to urge contractors and developers not only to remain positive but also to try and identify opportunities that may avail themselves. McCaig (2008, p. 65) further adds that it is essential for construction companies to reduce and review the costs involved in applicable areas. Additionally, it is important for the companies to invest in training, innovation and development and challenge the existing productivity with an aim of increasing efficiency.

Therefore, from the aforementioned discussion, it is essential to point out that even though the construction companies should have hope they should work hard towards achieving the same. Consequently, there is a need not only to improve productivity but also to regroup and take the availed opportunity to provide workers who have been retained with excellent training. Moreover according to Saleem (2009, p. 43) it is

essential for organizations to recognize and accept all of the issues that are related to a financial downturn. It is important for them to focus on the future too and concentrate on the areas in which they need to make changes in order for them not to feel the effects again so severely. In some cases it is essential for companies to prepare themselves for tough times so that they can avoid cancellation or postponement of construction projects that are in progress. This can be achieved by the companies not only getting back to the basics but also revising teamwork principles.

Before the financial downturn, the construction sector was moving at a fast pace that left the developers and contractors with no room to prepare for any future changes. Hence, out of all of the negative elements of the economic crisis there were some positive impacts that could be cherished by the construction companies. Additionally, according to Saleem (2009, p. 65) not all is lost as there are many experienced and qualified contractors and developers in the market to provide the much needed services despite a number of projects being postponed or cancelled.

## **Developers regarding financial crisis as an opportunity**

According to Saleem (2009, p.78) for the construction companies that are well established, the financial crisis did not impact negatively but positively. Davidson (2009, p. 90) supported this claim by pointing out that projects that were targeted and well planned will not be victims of the economic downturn. The author further confirmed that UAE has a level that is extraordinary across all sectors when it comes to construction (Roberts, 2009, p. 51)

In public investment projects both the authorities involved and the government put into use diverse frameworks of governance that impact on the construction projects (Suleyam, 2008, p. 45). Based on several case studies McCaig, (2008, p. 56) points out that there was a need to upgrade the existing frameworks in order to avoid postponing or cancellation of construction projects that were already in progress. The previous studies

have therefore recommended certain improvements have to be put in place to enhance the performance of projects within the construction industry. In line with this the Emirates have strived to appraise a number of projects at their initial stages of development in addition to integrating governance procedures in the projects that are long term (Luu et al, 2009, p. 81). Furthermore, the Emirates have insisted on the contractors and the developers focusing on the conceptual stages of a construction project with an aim of avoiding cancellation and postponement. This is due to the fact that in almost all projects there are uncertainties which may impede progress of current projects. In the case studies, the authors applied various models and methods to assess the possible causes of project cancellation or postponement. Luu et al (2009, p. 81) in his study made use of the Bayesian belief network to assess the possible causes of postponement or cancellation of construction projects. In his study Luu et al gave some suggestions for preventing cancellation or postponement of construction projects. The suggested mitigation measures included ensuring that the contractor makes prompt procurement for construction materials to avoid postponement or cancellation of projects on progress as a result of shortages of materials. Additionally, the developers should ensure that they make prompt payment to the contractors on a monthly basis. Lastly, there should be sound management of cash flow (Roberts, 2009, p. 50). Consequently all the players involved in the project should screen the procurement of materials and in situations where there is deficiency they should take the necessary actions to avoid project cancellation or postponement. Another study carried out by Alaghbari et al. (2007, p. 32) highlighted mitigation measures that are distinct from those suggested by Roberts (2009, p. 61) and derived various ways of preventing project cancellation or postponement. He recommended that there is the need to support projects both financially and technically in order to curb coordination and financial problems which are related to construction projects (Saleem, 2009, p.78).

## **Disputes in the construction industry**

Another factor that has contributed to postponement or cancellation of construction projects is the occurrence of disputes which have been on the increase. According to a

study carried out by (Suleyam, 2008, p. 45) the disputes result in legal action, arbitration and claims between the contractors and the developers and between the owners and the contractors (McCaig, 2008, p. 56). Furthermore in the UAE variations or change in the construction is experienced in almost all projects and the same contributes towards construction disputes in UAE.

## **Support provided by the Emirates in construction projects within UAE**

According to a report released by UAE (RNCOS, 2009) the economy of the country is strong and the key investors within the economy are the oil exporters and foreign investors. These aspects have contributed towards changing the economy of the country in addition to making it competitive. As a result of the strong economy, a higher percentage of investors have been had an interest in investing their money in construction projects. This has encouraged the Emirates, the private and public sector to invest huge sums of money in the construction sector. As a result of these investments in the Emirates a number of companies have started to invest in tourism and the real estate sector. The completed projects as a result of emirates support include Masdar City and Saadiyat Island. The main aim of the construction projects within UAE was to improve the lives of individuals. In regard to this for the construction projects to become a reality there is need for visionary leadership to be put in place an aspect that has been greatly supported by the Emirates (McCaig 2008, p. 51). Despite the fact that key constructions are in Dubai and Abu Dhabi, emirates from the north have likewise been keen in providing funds for construction projects. For instance Abu Dhabi government has been providing funds constantly for construction of infrastructure which include construction of drainage networks, houses and road networks. Additionally according to Suleyam (2008, p. 25) Sheikh Khalifa bin Zayed al Nahyan who was the president of UAE gave Dhs 16 billion for construction projects which were taking place in the northern Emirates. Moreover according to a study carried out by McCaig (2008, p. 56) the UAE is a key player in the Middle East region and enjoys approximately 42% of the total share of the property market. More importantly, construction projects which are valued at approximately US\$

1.3 trillion are still under way. Furthermore according to a study carried out, Bahrain spends approximately \$8 billion while Qatar increased its spending on construction projects by approximately 70% in 2008 as compared to 2007. Reports released further indicate that approximately 7,231 construction projects are at their initial stages while more than 1,000 are yet to commence. The aforementioned projects range from medical, hospitality to commercial ones.

## **Mitigation measures**

In order to curb the factors that have contributed to cancellation or postponement of construction projects, a number of mitigation measures have been implemented.

## **Risk Management**

According to Ibbs (1997b, p. 308) risk management is the process of planning, identifying, controlling, tracking and analyzing all the risks that are associated in any given project. Risk management can also be defined as the process of identifying factors that can affect the key objectives of any active project, undertaking an assessment of the identified factors before coming up with various strategies for handling them. The UAE construction sector has produced risk management techniques to avoid cancellation or postponement of construction projects. Due to the fact that this particular dissertation deals with the factors that leads to cancellation or postponement of construction projects, it is important to discuss the risk management techniques that the sector have put in place to contain problems.

Studies have shown that construction projects in UAE are not only constrained in terms of time but also budget, an aspect that impacts on the functionality of the end products. Therefore in order to curtail the aforementioned factors, Harris (2008, p. 99) suggests three factors that are essential for successful completion of a project, which include time, cost and quality. However, Ibbs (1997b, p. 310) further points out the importance of

efficient organization in the construction industry, an aspect that requires key players in the UAE construction sector to organize the required resources in any given project to avoid cancellation or postponement. This has encouraged the constructors and developers in UAE to divide the construction projects into two phases that is the post and the pre-contract phases. In the pre-contract phase, feasibility studies are carried out in addition to preparation of drawings and designs, acquisition of lands, carrying out the bid process and finally awarding the contracts. On the other hand, the post-contract phase involves preparation of designs and drawings that are detailed, procurement, construction and project commissioning. In every construction contract there are three parties which are involved this include the consultant, the client and the contractor. Ibbs (1997b, p. 309) defines a client as an individual who assigns another party the task of carrying out a particular task such as land work, construction or demolition. The contractor has the responsibility of providing services such as execution of the construction work for the client. The consultants have the role of providing assistance to both the contractors and the clients by delivering both engineering and architectural services. Hence due to the fact that the process of construction projects in UAE involves a number of activities that interact with one another, the management of the industry has ensured that there is proper coordination as these can affect the time, cost and quality leading to project cancellation or postponement. Due to the dynamic nature of construction projects, they are likely to change thus the UAE construction management have tried to involve all parties involved in the construction project to work together with the aim of attaining the objectives of the project (Belkacem & Imed, 2002, p. 11).

## **Controlling the price of diesel prices**

According to Kumaraswamy, Miller & Yogeswaran (1998, p. 283) the price of crude oil impacts on prices of fuels such as diesel which is one of the raw materials used in the construction process. The price of diesel has been fluctuating on the basis of international prices. According to a report by Harris, (2008, p. 71) in 2008, the price of crude oil was \$147 per barrel before stabilizing at approximately \$33 in 2009. Changes in the prices of

diesel are associated with price fluctuation and inflation in the construction industry materials in the UAE an aspect that contributes to the postponement and cancellation of some projects.

Additionally, the construction industry has proven to be one of the key employers in the UAE and it utilizes diesel for the purpose of transporting the construction materials in addition to operating machinery. The same perception is held by Harris, (2008, p. 71) who argues that diesel is the lifeline of the UAE construction sector and hence its scarcity or high cost results in the cancellation or postponement of some projects. This is because every construction material has to be transported from the production to the distribution and finally to the construction site and hence a hike in the cost of diesel will result in an increase in the price of the material meaning some projects are postponed or cancelled all together. Kumaraswamy, Miller & Yogeswaran (1998, p. 283) further support Harris (2008, p. 16) and argue that diesel powers the UAE construction industry as most of the generators deployed in the engineering process use diesel. Belkacem & Imed (2002, p. 12) added that in UAE, there have been fluctuations in the price of diesel for instance in July 2007, the price per gallon stood at AED 8.6 while in 2008 there was an increase. Ibbs (1997b, p. 310) carried out another study on the behavior on the price of concrete and diesel in 2008 and concluded that an increase in the prices of construction materials contributed to cancellation or postponement of some of the major construction projects in UAE.

## **Resolution of Construction Dispute in UAE**

Another mitigation measure that has been taken by the UAE construction industry is to come up with ways of resolving disputes in the industry. According to Assaf, Al-Khalil and Al-Hazmi (1995, p. 45) in recent years there have been a number of construction projects, particularly in Dubai and Abu Dhabi, which have resulted in an increase in

claims and disputes between contractors and their employers. A study carried out by Faridi & El-Sayegh (2006, p. 29) stated that as a result of the increase of construction projects and contracts in UAE there have been a number of claims or disputes that need to be addressed in order to avoid future cancellation or postponement of projects. This has encouraged consultants, contractors, clients and UAE government to come up with various ways of reducing or settling these disputes (Ibbs (1997b, p. 317). The study found out that arbitration is an effective method of settling these kinds of disputes. Similar findings were echoed by Kumaraswamy, Miller & Yogeswaran (1998, p. 283) who added that construction disputes in UAE are either through litigation or arbitration. The study further indicated that arbitration is one of the methods that are used to resolve disputes in UAE construction industry (Assaf, Al-Khalil and Al-Hazmi, 1995, p. 50). Ibbs (1997b, p. 308) adds that arbitration has been widely accepted as the best method for resolving disputes among participants in the construction sector. Furthermore, the participants in construction are generally in favour of arbitration and not litigation due to the fact that construction arbitration has proven to be based on construction expertise and thus they are in a position to handle construction disputes that are complex and technical in nature (Robert, 2005, p. 34). Nonetheless, it is essential to note that litigation methods are still widely used. According to Dubai Courts Annual Report (2007), the use of litigation in resolving construction disputes is on the increase. Moreover, due to the fact that UAE has been considered as a trading, financial and commercial hub in the Middle East region, it has continued to attract international companies from different parts of the world. Hence, the UAE government has transformed the legal framework to ensure that the law plays an important role in resolving construction disputes in addition to getting involved in any form of arbitration to avoid cancellation or postponement of construction projects (Belkacem, & Imed, 2002, p. 49).

Therefore in order to avoid cancellation or postponement of construction projects as a result of construction disputes, the UAE federal courts have been provided with schemes for the purposes of conciliation as an alternative means for resolving disputes whereby all cases that are presented before the federal judges are first referred to the conciliation desk

which is presided over by the junior judges in the federal court (CII, 1986). It is evident that players in the construction industry always want their disputes to be resolved as fast as possible in order to prevent postponement or cancellation of construction projects. Additionally, due to the fact that litigation is not only expensive and slow but also uncertain most players have opted for arbitration.

Hence in order to make improvements in the speed with which disputes are resolved within the UAE construction industry, Belkacem & Imed (2002, p. 18) assert that it is important for arbitrators in the construction industry to carry the challenges involved such as managing the cost and timescale of the arbitration process. Nonetheless, Robert (2005, p. 34) argues that what UAE requires is a legal reform route that is fundamental in nature in addition to ADR processes that will assist in overcoming the existing difficulties instead of leaving the challenges involved to the arbitrators (Ibbs, 1997b, p. 308). Belaid & Al Deen (2007, p. 78) propose that legal reforms need to be established in a number of major areas like establishment of enforceable and reliable ADR mechanisms, putting in place construction courts which should be presided over by construction judges in addition to establishing effective adjudication and arbitration awards.

## **Improvements made in the UAE construction industry**

This section gives the instruments implemented in Dubai to improve the construction industry and avoid postponement or cancelation of projects. In recent years, both developers and contractors have been forced to follow certain building codes in order to avoid construction disputes. In addition to that there have been economic/market based instruments which have been established to reduce the problems. The UAE government has tried to regularize fuel prices in order to avoid price fluctuations which have had a negative impact on construction materials. For instance according to Assaf, Al-Khalil and Al-Hazmi, (1995, p. 63) there have been laws and regulations which aim at reducing the consumption of fuel within the energy sector in addition to providing financial support to the construction industry.

Furthermore, there have been tax reductions and exemptions in certain construction materials with an aim of reducing the cost of construction materials. Consequently there has been an introduction of green building regulations which developers and contractors have had difficulties coping and complying with. Robert (2005, p. 60) stated that the main aim of the green building regulation in Dubai and the Gulf region was to ensure that the developers met all the sustainable development requirements. The policy covers both public and private institutions with the aim of them meeting and attaining LEED certification.

### **Price fluctuation clause**

The UAE have introduced a price fluctuation clause with the aim of reducing cancellation or postponement of construction projects due to an increase in the price of materials. The same have also aimed at reducing the rates of disputes within the industry. The clause have put into consideration all the provisional allowances pertaining to price fluctuation clause 70.1 of FIDIC which was introduced in 1987. This was steered by the increase in rates of inflation on a global perspective which negatively impacted on the UAE construction industry in addition to being prevalent during the economic boom years in the sector. According to a study carried out by Robert (2005, p. 34) contractors for decades had experienced difficulties as a result of a volatile materials market, in particular cement and steel, and the result is that financing, estimating and bidding key projects not only in Abu Dhabi but also in Dubai have become quite a challenge. Hence, the price fluctuation clause has been introduced due to the fact that without it there is an increase of price of machinery, manpower and construction materials which negatively impact on the cash flow of the contractors, an aspect that can result in the postponement or cancellation of some projects (Ibbs, 1997b, p. 309). The lack of a price fluctuation clause can actually result in the organization of the contractor being closed due to bankruptcy. Assaf, Al-Khalil and Al-Hazmi, (1995, p. 73) add that the price fluctuation clause was instituted because lack of it is likely to result in construction projects being

extended an aspect that can increase related costs drastically. In addition to that the price fluctuation clause has put control over unnecessary adjustment of contractors' prices in case there is an increase in the price of construction material so that contractors do not experience any financial difficulty.

According to a study carried out in Dubai and Abu Dhabi, the lack of price fluctuation impacts negatively on contractors who are new to the construction industry. Nonetheless, the experienced contractors are also affected since there is the possibility of them losing their profits an aspect that may make them not take on new construction projects. This has encouraged the UAE industry to instigate legal principles such as commercial impracticability, impossibility, force majeure and frustration of purpose into use by ensuring that there are facts that meet the requirements within the construction industry without causing any dispute (Assaf, Al-Khalil and Al-Hazmi, 1995, p. 73).

The UAE have also ensured that there is a number of legal systems whereby the contractors are in a position to excuse themselves from carrying out certain obligations which are in the contract so as to avoid cancellation or postponement of a project in case the contractor is not in a position to carry out all of the obligations as outlined in the contract (Kumaraswamy, Miller & Yogeswaran, 1998, p. 300).

The force majeure clause has also been implemented by the UAE government and a high percentage of contractors strongly support it (Robert, 2005, p. 34). This particular clause provides protection to the parties in a construction contract in circumstances whereby the contract itself fails to do so. The aforementioned clause has been put into place to protect the parties in circumstances whereby the contract cannot be executed as a result of certain events which cannot be avoided. Conditions of the contracts that have been currently adapted in Dubai and Abu Dhabi include force majeure clause which gives the contractor an extra period of time to complete the projects rather than postponing or cancelling them (Assaf, Al-Khalil and Al-Hazmi, 1995, p. 73). The contracts have made it possible for the

contractors to have extra time for obtaining the construction materials without placing the project on hold.

Additionally, the UEA construction industry, and in particular Dubai, have successfully reduced the rate of disputes and claims in the sector an aspect that has contributed to less projects being postponed or cancelled. The possibility of the price fluctuating has also been included in some of the contracts making the contractors to minimize the possibility of losses (FIDIC, 1999).

Moreover, courts in the GCC countries and in particular in Dubai have implemented techniques that do not permit parties involved in any construction project to avoid, for instance they do not allow the players involved to escape contractual obligation. Consequently there has been a reinforcement of contracts which are called lump sum fixed priced that only allocate risks without tying the same to a certain risk an aspect that allows changes to occur in the contracts and thus avoid cancellation or postponement of projects (Assaf, Al-Khalil and Al-Hazmi, 1995, p. 73).

## **Importance of Risk Management in UAE Construction Projects**

Due to the nature of the construction industry, the developers, the clients and the contractors have seen the importance of risk management in the construction industry. Assaf, Al-Khalil & Al-Hazmi, (1995, p. 90) supported this by arguing that risks in the construction industry can be managed, minimized, shared, controlled in order to avoid cancellation or postponement of construction projects in UAE. Harris (2008, p. 56) in his study highlights the importance of efficient risk management techniques in the UAE construction industry as a means of curbing increased rates of projects cancellation or postponement. Belaid & Bader Al Deen (2007, p. 90) has one of the mitigation measures,

the construction industry has embraced risk management techniques as one of the ways of dealing with projects cancellation or postponement.

Kumaraswamy, Miller & Yogeswaran (1998, p. 283) elaborate on this by pointing out various risks that have been associated with construction projects in UAE. In regard to this, a higher percentage of contractors in UAE have taken the aspect of risk management seriously in execution of projects. According to a study carried out by Harris (2008, 15) clients have been working hard towards reducing the risks associated with construction projects with an aim of avoiding cancellation or postponement of the same. Belkacem & Imed (2002, p. 17) points out that this has been achieved by clients not only seeking guarantees but also putting in place recourse financing.

Ibbs (1997b, p. 311) mentions some of the risks that are associated with UAE construction industry and these include material delivery risks, interface risks, tax risks and local site risks which can result into postponement or cancellation of some projects. Nonetheless some of the risks are associated with changes in the existing laws which are likely to impact on the life of a project. Hence in order to manage these risks, the UAE contractors and developers have implemented efficient coordination among all the parties that are involved in the construction industry. In addition to that the sector has embraced employing construction administrators who are experienced. Therefore, one of the mitigation measures that the industry have employed for decades to end cancellation or postponement of construction projects in UAE is putting in place effective risk management techniques.

## **Sources of funding**

Economic growth as a result of increased income from the oil sector in addition to booming tourism, demographic fundamentals that are favorable in nature and increased commercial prominence have immensely contributed to the boom in the construction sector in UAE. Other factors that have greatly contributed to this and acted as a source of finance for the industry is the repatriation of funds which were invested in other countries such as US. According to Harris, (2008, p. 71) after the 9/11 US attack, the UAE government encouraged investors and in particular private ones to put their money into the construction industry. In addition to that there has been liberation of laws that are responsible for the regulation of foreign property ownership and business activities (Robert 2005, p. 34). In a report published by Kumaraswamy, Miller & Yogeswaran (1998, p. 283) it was calculated that approximately 2,100 projects were either underway or planned in the Gulf region alone. That is the countries in the GCC which include Oman, Qatar, Saudi Arabia, Bahrain, Iraq and UAE. Studies further indicate that Dubai is regarded as the construction capital of the Gulf region containing approximately 15-25% of the construction cranes that are in operation in the world. The funding from the GCC countries have further assisted the property market of UAE to retain a positive market outlook despite previous speculations that it would be negatively affected in a drastic manner (Ibbs, 1997b, p. 308). This has been a result of positive commercial fundamentals and sustained demographic growth trend that are favorable in nature.

As a result of the success of Dubai, Abu Dhabi which is the capital of UAE has gained a lot and is mostly likely to become the next Dubai as a result of a boom in its construction industry. Furthermore, Robert (2005, p. 90) points out that the presence of Asia in the Gulf region is of great significance. This is because UAE construction industry and those of other countries such as Saudi Arabia recognize the competitive edge of Asia such as its construction expertise which is regarded as world-class in nature, in addition to having extensive experience in construction in marine work, infrastructure as well as high rise buildings. Hence as a result of more high-rise buildings being constructed, the Asians' experience and expertise have greatly helped the construction industry in Jeddah, Dubai

and UAE with Abu Dhabi taking advantage of the same to expand its marine projects. Therefore, it can be concluded that the UAE has not only benefited in terms of finance but also expertise which has greatly contributed towards expansion of its construction industry.

## **Support provided by GCC in UAE construction industry**

The governments of the GCC nations have supported the UAE construction industry in a number of ways. According to a study carried out by Ibbs (1997b, p. 308) the GCC countries have concentrated on recapitalizing the banking industry. They have attained this through buying assets that are toxic in nature with an aim of strengthening the balance sheets of banks so as to reduce the global financial crisis. Additionally, the GCC have provided guarantees on new loans to a number of investing firms specializing in the construction industry. Therefore, the monetary policies of the GCC nations have focused on increasing liquidity in the UAE market with an aim of boosting the confidence of foreign investors not only in the construction industry but in the UAE economy as a whole. It is important to point out that despite all the GCC nations being negatively affected by the financial crisis, the nations have not been deterred from supporting the UAE construction sector. Moreover, with the help of the GCC countries, the UAE finance ministry and the central bank have set aside approximately Dh 120 billion as emergency funding to assist the banks not only to ease the existing funding shortage but also to help them deal with stringent credit conditions.

The Abu Dhabi government has been in a better position in terms of finances and has further invested approximately 16 billion dirham in bank funds which aim at contending with the default rates which are on the rise with the key objective of supporting the UAE construction industry. In addition to that the central bank of UAE have set up swap facilities which has maturities terms ranging from one week to a year with an aim of

assisting the banks to handle liquidity needs in circumstances where there is an unavailability of supply on the inter-bank market (Ibbs, 1997b, p. 308).

The Omani and Bahrain governments, as a result of being constrained by their financial resources which are limited in nature, have employed a distinctive approach that focuses on particular policies with the aim of strengthening the manufacturing sector.

Furthermore, the Omani central bank has promised to give liquidity to banks in times of hardships with an aim of curbing financial problems faced by the construction sector.

Additionally, the Minister for Trade and Industry of Oman has advised the industrialists in the country to embrace competition by establishing competitive prices and constructing quality infrastructures. In regard to this to this it is evident that the GCC countries have supported the UAE construction sector in a number of ways. The next chapter will outline and discuss the methodology used for this dissertation study.

## **CHAPTER THREE: RESEARCH METHODOLOGY AND DESIGN**

This current study examines factors that results into cancellation or postponement of construction projects in UAE with concentration in Abu Dhabi region. The study will entail examination of four extreme cases of projects which were cancelled.

### **Case Study Method**

Case study method is one of the most commonly used techniques for carrying out research but there is likelihood of precedents emerging. According to, case study method does not only bring out a better understanding of an issue or object that is complex in nature but also add strength or enhance experience to an aspect that is already known from the previous studies. In this particular technique the researcher has the responsibility of collecting a number of data pertaining and relevant to the topic under study drawing the same from the issues which are similar to the research subject as well as forming the opinion of the researcher in line with the data collected. Individuals who are responsible for analyzing case study method as a way of collecting data advices that it is essential that researches uses more than one case study rather than relying on one single case study but all the cases ought to be comparable. Additionally, adds that researchers who carry out a particular study for any specific subject should not only describe and analyze the existing problem but also provide a comparison for the problems before finally concluding on the findings. One of the advantages for this particular method is that it is less time consuming if the required data can be easily obtained in addition to the technique being cost effective. According to (Simons and Yin, 1997, p. 71) most research studies make this method with an aim of obtaining useful findings. Nonetheless, it has been pointed out that in circumstances whereby the topic under study is sensitive or complex, there is need for the researcher to make use of this method (Yin, 1994), when the topic of study is very complex and sensitive use of a number of case studies, an aspect that makes the method to be difficult to handle. Furthermore, to carry out a case study for any dissertation on any particular topic, there is need to be an estimation of not less than three case studies from different companies or from different projects (Simons and Yin, 1997, p. 71).

This particular study adopts the case study method due to the fact that this particular study entails an in depth examination and analysis of particular projects in addition to the method providing systematic ways of examining events, reporting results, analysis the existing information and even collecting the required data. Proleads (2009, p. 79) advocated and recommended the use of case studies in conducting research. According to Simons, and Yin (1997, p. 71) the method provides a contextual analysis that is detailed in nature of a number of events which can be considered to be limited. Moreover, case study has a method of data collection have been used by various researchers across a number of disciplines thus improving the reliability of the method.

However, due to time limitation, the method has proven to be suitable for this current study. This is because the timeline in which this particular study was carried out was too short for other methods of data collection such as the use of interviews and questionnaires. In addition to that the information obtained is likely to be of high quality as well as the method being cost effective for this particular study. In line with this, the selected case studies relate to the specific context of Abu Dhabi and in particular construction projects which were not completed due to one reason or the other. The findings obtained from the selected case studies in a number of ways are a representative of the construction industry of UAE. Moreover, it is has been pointed out that small number of cases are likely to provide sufficient grounds for establishing generality or reliability of the findings obtained in addition to that a more comprehensive studies are likely to be established with an aim of recommending a study that will examine the full extent of the effects of the postponement or cancellation of the construction projects in Abu Dhabi. Proleads (2009, p. 23) who is a well known researcher and an advocator of case studies not only admired the use of the method in carrying out research but also suggested a number of techniques for conducting and analyzing case studies successfully. Hence, this particular study draws from the same which was successfully implemented by Ibbs (1997b, p. 322) and thus follows the steps outlined below:

## **Choose the projects/cases to be used**

Determine techniques for gathering and analyzing the collected data

Evaluate and analyze the obtained data

Conclude on the obtained findings

In regard to this, there will be a pre-research whereby research will be carried out with an aim of selecting the most suitable cases to be used in the research. The second stage will entail data collection, Data analysis then presentation of the results.

## **Preliminary research**

This particular stage entails selection of the case to be used in the study. For this particular study, four cases will be used. The cases will be drawn from UAE region and in specific Abu Dhabi and they will involve cases cancelled or postponed. Case one is about a construction project that was put on hold for one reason or the other. Case 2 involves a case that was started then postponed while case 3 and 4 entails projects that were cancelled for one reason or the other.

Additionally, it is important to note that each case used in this particular study is treated individually however; the findings and observations made to come up with the required information contribute successfully to the whole study. The aforesaid cases have been carefully selected due to the fact that each of them is unique and valuable to this particular study. Additionally, the cases are drawn from March 2007 to 2008 when the construction industry was experiencing a boom to the period when there was great recession. The selected cases entails and covers volatile cases in addition to a comprehensive reflection on the impacts of inflation as well as other factors that have impacted negatively on the UAE construction industry.

## **Data gathering and analysis tools**

The main strength of this particular dissertation study is on the various techniques applied in the process of gathering data.



## **CHAPTER FOUR: RESULTS – FOUR CASE STUDIES**

### **Case 1-**

The following information on the project mentioned was provided by a senior quantity surveyor on construction projects in UAE and discussion on the same was gathered from other sources as the author of the report was not available for the purpose of discussion.

General project details

Name of the project West Bay Tower (Business Bay)

Contractor: BK Gulf

Consultant: Abu Dhabi Dubarch consultants

The period for the completion of the project; May 2007

Time when the project was finally completed: May 2009

Proposed construction period as per the signed contract 21 months

The date the project was finally completed

### **Brief summary of the construction project**

The project entailed construction of a hotel which had two basement levels for ground reception and for parking. The hotel under construction also had 6 floors which had 480 guest rooms. The general nature of the construction project was complex due to the fact that there was a number of contractors and phases. The problems that led to the project being canceled or postponement began when the first client floated tenders that pertain to the awarding of the project. Despite the lowest bid being received at Dhs 123 million the higher authority failed to approve it as a result of the high price involved (Proleads, 2009, p. 79). As a result of this, the tendering process was conducted again resulting in the project being put on hold from the outset. This time the lowest bid which totaled up to Dhs 63,982,850.16 was approved but the problem was that the contractor who was given

the award was only experienced in projects pertaining to water pipes. Further examination of the contractor who had been awarded the contract revealed that the contractor had never been involved in the construction of houses. Additionally, the company in question did not employ higher qualified staff for the aforementioned engineering works with an aim of reducing the costs involved in completing the whole project. Despite, the aforesaid aspects being highlighted, the important elements to ensure that a project was carried out to its completion were ignored resulting to its postponement. This is due to the fact that the client was attracted to the low bid that was offered by the contractor in question. According to research carried out by Proleads (2009, p. 45) in UAE contractors who have been awarded low bids results in cancellation or postponement of construction projects due to financial deficiencies. The project was completed after 930 days instead of the initial duration which was 456 days. It regard to this, it is essential to point out that both the contractor, the client and even the government authorities contributed to the postponement of this particular construction project (Warnock, 2009, p. 13).

Nonetheless, other factors too contributed to the postponement of this particular project. For instance, the contractor who was awarded the contract was not only incompetent but also had problems with project scheduling (Proleads, 2009, p. 45). Moreover, the supply of construction materials was impacted negatively by the rate of inflation as well as the suppliers and the sub-contractors delaying to provide the required materials on time. Assaf and al He-hejji (2006, p. 67) further pointed out that the contractors need to establish and maintain a long lasting relationship with the suppliers so as to avoid running out of construction materials an aspect that can contribute to postponement or cancellation of certain projects. This important aspect was amiss when the aforementioned project was in progress. Nonetheless, it is important to note that suppliers can be of great help to the constructors in circumstances whereby there is unavailability or an increase in the price of the construction materials. However, Ibbs (1997b, p. 3011) in his study pointed out that even if there is establishment of supply chains who are reliable there is still a need for contractors to ensure that all commitments obtained from

the chain suppliers are a reflection of their duties to their clients. Furthermore, the quotation of the suppliers should be scrutinized as there is likelihood of them giving bids that have increased cost or which are not available an aspect that may leave the contractors not wanting to pick up the tab.

Moreover, it is essential for foreign contractors who were awarded this particular project were not familiar with the requirements of the UAE construction market. This will made them not to be in a position to be alert on any kind of development that could impact on the prices of construction materials resulting into cancellation of the project. Robert (2005, p. 34) in his study, pointed out that if the foreign contractors are conversant with the UAE construction market they are likely to purchase the required materials in advance. Nonetheless, the same resulted into challenges such as cash flow being drained out in addition to incurring costs pertaining to security and storage space for the materials as they were to be stored for considerable long period of time.

In another perspective, it was evident that the postponement of the project was due to financial constraints an aspect that was further steered by the contractor offering the lowest bid. This led the contractor to experience acute financial shortages as well as the client stopping to pay for the work as a result of the delay. On the other hand, the prices of the construction materials increased considerably making the aspect of finance to be highlighted as one of the factors that result in postponement of most projects in Abu Dhabi.

## **Case study 2**

Name of the works Desert Gate Hotels and Towers 350

Consultant: Beca International

Contractor: Dutco Balfour Beatty

Date when the construction was started; November 2007

Proposed date for completion 30<sup>th</sup> December 2009

Time when the project was finally completed: December 2010.

## **Summary of the project description**

This particular project consisted of a story building of offices which consisted of reception area, ground floor and 24 floors which were all offices. The tender for this particular project was awarded on 8<sup>th</sup> August, 2006 to the Arab Emirates Dirham for a sum of AED 298 million. The period of the contract in mention was for 18 months. After the contract was signed, the project was started on November 2007 with the completion date as stipulated in the contract form to be June 2009. The project was postponed and thus it was not completed on time. According to Kumar (2008, p. 67) the postponement of the project under study was as a result of non-payment of the required monthly statements in addition to increase in the prices of building materials. This made the project to be under suspension for considerably long period of time. Additionally, from the study, it was evident that the developers failed to honor their pledges to the contractors. As per the clause 8.8 of the contract act, the engineer has the right to suspend work already on progress due to various reasons. In this particular case, the contractor was forced to postpone the whole project due to the clause 8.8 and request for extra time to complete the work. Moreover, despite the contractor having the right to pursue the issue and stop the engineer from canceling the project, the duration for the completion of the project was extended. The extension of the construction period meant that the contractor experienced financial problems and thus the whole project was put on hold from January 2009. This confirms the report which was released by (Proleads, 2009, p. 81) on factors that result in suspension or cancellation of projects. Moreover, as reported by Kumar (2008, p. 67) it can be pointed out that towards the end of 2007, the price of construction materials increased. This encouraged the suppliers to review the prices of materials such as cement and steel after every two years.

## **Effects of the economic crisis on the project**

As per the report obtained from Kumar (2008, p. 67) the project on its commencement had 13 senior managers and 22 staff who were junior members. However, as a result of the project being suspended, approximately 16 junior staff and 530 laborers were retrenched. Consequently those employees who remained were transferred to other existing projects within the company as the management reviewed the possibility of any existing employment opportunities within the organization. According to the human resources of the construction company under study, there is a possibility of the company losing its significance. As a result of the employees losing their sources of income, foreign workers went back to their native countries while others moved on to employment elsewhere. The aforementioned case study is a practical example of what mentioned as impacts of postponement or cancellation of construction projects due to the economic crisis.

## **Effects of the economic crisis to the developer**

From this particular case study, it is evident that the suspension did not only impact negatively on the contractor and the employees but also on the developer. The development of the project came into halt as the employer was not in a position to pay the contractor as a result of financial deficiency an aspect that can be directly linked to the 2008 economic crisis. However, there is possibility that the project may resume if there is availability of finances. But this will be only possible if there are new negotiations on the rates and time of completion. However, in case there is an increase in the prices of construction materials, the developer or the employer will require additional finances than were initially planned for the purpose of carrying the project through to its completion. However, it is important to point out that should the same fail to happen, it will be advantageous to the employers as they will incur reduced cost. Kumar (2008, p. 67) in his study further pointed out that a number of developers within UAE region have stopped or shelved construction projects as a result of the effects of economic crisis and

price fluctuations of the required construction materials as highlighted in this particular case study.

### **Case study 3**

Name of the works Desert Gate Hotels and Towers 350

Client in charge: Emirates German Group

Date when the construction was started: July 2008

Proposed date for completion: December 2009

Time when the project was finally completed: March 2010

Date for preliminarily handing over the project:

### **Brief summary of the construction project**

This particular project under study consisted of a three tower complexes which had offices, residences and a hotel. Moreover, the tower was being constructed on a podium which did not only provide car parking but also housed electrical installations and mechanical buildings. The main purpose of the podium was to provide support for the constructed ground floor which had both the reception area and the hotel lobby in addition to being the entrance to the office block, the residences and the furnished apartments. In addition to that, the project entailed a number of restaurants and shopping arcade and its mezzanine floor had restaurants, meeting rooms and business center (Squire, 2008, p. 22). From floor one to floor six of this particular project in the constructed podium had a modern car park while floor seven was to house furnished apartments and the hotel entrance which also had steam rooms, sauna, gym, swimming pools, cover pool decks and a number of offices. Consequently floor 8 to 25 comprised of guest rooms which were all housed in tower one while the furnished apartments were

located in the 27<sup>th</sup> to 41<sup>st</sup> floor of the block. The second tower of the project was to house residential apartments while the third one had open offices.

### **Contract sum and term**

The tender for the project in question was awarded in November 2007 and it was supposed to be completed within a time frame of 30 months. The contract was drawn in line with the general conditions of a contract as outlined in a civil engineering construction contract. In the contract, the client had requested the contractor to measure the quantities of the remaining work after every 90 days. However, according to records established by Assaf and al He-hejji (2006, p. 67) in 2012, the terms of measurement had not been agreed upon. This forced the contractor and the client to start the work without finalizing the terms of the contract pertaining to measurement of the works and how it should be carried out.

### **The status of the construction project under study**

The contract was signed on February 2007 but the construction process started on July 2008 with the completion date stipulated as December 2009. The project was delayed for approximately three months due to a number of factors one of them being financial constraints. Consequently, the contractor breached the terms of the contract due to the fact that the project was not completed on time.

Moreover, an increase in the price of construction materials impacted negatively on the status of the project apart from the aforementioned factors which caused it not to be completed on time. For instance, it has been reported that the price of mix concrete increased approximately by 38% to 66% in the period between 2007 and 2008 leading to the project to be put in hold. In addition to that the price of steel reinforcement also increased considerably.

## **Effects of economic crisis on the project**

Due to the existing economic crisis when the project was in progress, a higher percentage of staff were either laid off or transferred from the projects which were either on hold or canceled. Nonetheless, other construction companies had the advantage of choosing and picking the staff from other companies an aspect that made their construction team not only strong but also well managed. Additionally, it is important to point out that the retrenched employees were replaced resulting in the loss of jobs. This is in line with the argument presented by Assaf and al He-hejji (2006, p. 52) on the importance of adopting an effective policy that will constantly result in review of the cost base an aspect that can result in an improvement of operational efficiency.

The findings from this particular case study revealed that the prices of construction materials were stable in 2006 and 2007. However, this changed drastically as prices increased as from mid 2007 through to mid 2008. However, there was a decline in the prices of the essential construction materials as from mid 2008 through 2009. However, price fluctuation was not as a result of financial crisis but as a result of increased transportation and production cost which heavily impacted on the price of fuel. Hence, it is evident a price fluctuation did not only impact on the construction industry in UAE but also caused confusion and lack of stability. Moreover, improper selection of projects further resulted in postponement of this particular project. Additionally, a concept that is not easily applicable hindered the success of the project. A top management that is not supportive in nature also resulted into the project being unsuccessful. In regard to this it is essential for the top management to be in agreement in the selected concepts to be applied in the construction industry and take proper action in case of any dispute. Consequently, that lack of adequate system of control and planning resulted in an imbalance between technical, schedule and cost performance. Hence the postponement of this project's particular project can be attributed to the misuse of management techniques which negatively impacted on its progress. Other factors considered as the key causes for postponement of this construction project are poor identification and understanding of needs of the end user and the client (The World Bank Group, 2008). Based on the

aforementioned study if unrealistic objectives are set, there is likely to be schedule overruns and huge costs which may further resulted into some projects which are already in progress to be postponed. Hence, it is important to note that performance, structure and functions of all the parties and individuals involved in the project in addition to lack of appreciation of change and dynamics lead to cancellation or postponement of construction projects as highlighted in this particular case study. This is in line with factors Kumaraswamy, Miller & Yogeswaran (1998, p. 286) highlighted in their study as effect of poor control and monitoring at the implementation stage as the key source for cancellation or postponement of construction projects in UAE.

However, it has been further reported that the project was finally cancelled after being put on hold a number of times. This is because the contractor failed to pay the subcontractor on time an aspect that was more devastating on the project as a whole. This can be linked to lack of liquidity being injected in the market as the contractors were not in a position to obtain enough to pay the hired contractors an aspect that resulted into them too failing to pay the suppliers and the subcontractors (Warnock, 2009, p. 13). The aforesaid factors were the major cause for the cancellation of the project in question. In line with the terms of construction contract in UAE pertaining to the existing FIDIC contract form, the employers should make payment to the engineer in a time frame of 30 days. Therefore, suppliers, contractors and the subcontractors were only in a position to get their payment after the client has made payment to the engineer. Therefore, in line with this, the whole project was cancelled due to the fact that suppliers, subcontractors, developers and contractor are impacted negatively by lack of finances. Additionally, the same impacts negatively by lack of job opportunities as construction businesses are not in a position to operate efficiently.

Moreover as a result of this particular construction project being cancelled, the migrant workers who form higher percentage of the UAE workforce lost their jobs. According to study carried out by Ibbs (1997b, p. 343) cancellation or postponement of construction

projects as well as developers being not in a position to pay subcontractors, suppliers and contractors as a result of financial deficiency render high percentage of individuals jobless. A number of companies in UAE have responded to financial crisis by laying off staff and Warnock (2009, p. 13) is not an exception as the employees lost their jobs when the project was cancelled. However, the highly affected employees were those from Asian continent due to their high number in the UAE. Moreover, the cancellation of this particular project by the developer made the contractor to make changes into his business so that to reduce the costs incurred in running it to sustainable levels.

The project was cancelled as a result of escalation factors that contributed price of construction materials fluctuating. These factors included increases in the cost of shipping and transport, raw materials, the existing world economic crisis and increase in the number of construction activities. However, according to study carried out by Kumar (2008, p. 33) the existing price fluctuations of construction materials are as a result of government setting up the prices as well as the strength of the local currency in the international market, seasonal fluctuations and oversupply of commodities and goods. Assaf and al He-hejji (2006, p. 67) pointed out that adjusting price clauses in construction contracts will curb price fluctuation of construction materials. This is a matter of concern due to the fact that prices for construction materials have remained high and thus impacted on the industry negatively.

In line with the aforementioned factors, it is evident that the cancellation was as a result of the price of the construction materials being unstable. Moreover, it can be pointed out that price fluctuation results in acute shortage of labor in addition to required resources an aspect that could have too contributed to cancellation of this particular projects as highlighted by Harris (2007, p. 57) in his previous studies.

The cancellation of the project resulted into strained relation between the developer and the contractor involved. The cancellation of this particular project can be further attributed to the fact that it was awarded to the contractor who had a record on completing projects earlier without regarding his financial status (Vine, Al Abed & Hellyer, 2009, p. 43). However according to industry experts, inflation of prices of building materials also resulted in the relationship between the contractors and developers being strained. In the same line, it is essential to point out that the technique for selecting contractors have also changed due to the economic crisis and as a result clients have shifted their focus to evaluating the relationships they have with the contractors. Moreover, despite the construction boom contributing greatly to a generation of greater percentage of income to the UAE economy and thus the contractors have been on demand an aspect that has further resulted in price fluctuations of construction materials. For instance during the time in which the project which is used as a case study in this particular dissertation, there was a number of projects in progress an aspect that resulted in the price of construction materials to shoot up making the contractor not in a position to continue financing the same resulting in its cancellation (Warnock, 2009, p. 13). As a result of increased prices of the construction materials, contractors find themselves experiencing huge backlogs an aspect that has made it hard to find good contractors for other upcoming construction projects.

In addition to that, in this particular case study it is evident that that politics of the clients, ineffective communication, and lack of respect for other parties involved in the industry are some of the reasons. The same findings were highlighted by who found out that lack of communication, poor management, constant change of authority are some of the factors that results in the postponement or cancellation of construction projects in UAE.

In line with this particular case study, Squire (2008, p. 31) reported that inflation contributed to an increase in the price of construction materials an aspect that forced both unskilled and skilled labor to leave the country. This aspect further resulted in the project

being cancelled in addition to the developers not being in a position to meet the costs of the building materials. This made the construction industries on the other hand to lose out on their businesses (Warnock, 2009, p. 90).

## **Case study 4**

The project was part of a major university that was to be constructed in Abu Dhabi. The work consisted building of fire mains, water mains, access roads, sewerage, storm water, irrigation mains, communication ducts and a flyover.

Name of the works Desert Gate Hotels and Towers 350

Consultant: Beca International

Contractor: Dutco Balfour Beatty

Date when the construction was started: June 2007

Proposed date for completion: June 2008

Time when the project was finally completed: August 2010.

Date for preliminarily handing over the project; November 2010

The project under case study was postponed resulting in it not completed on time. Factors that resulted into the project being put into hold are associated with the cost of materials, suppliers and the contribution of the contractors to the same. For instance, the contract experienced financial deficiencies as the contractor was not strong enough from the offset of the project as well as increase in the price of construction materials (Warnock, 2009, p. 17). In addition to that the constructors failed to perform in an efficient manner thus resulting in the project being put on hold by the client an aspect that resulted in the project not only being completed on time but eventually being cancelled (Naoum, 1998, p. 34).

Moreover, the project was constrained by their financial resources which are limited in nature have employed a distinct approach that focuses on particular policies with an aim of strengthening the manufacturing sector. Furthermore, the Omani Central Bank has promised to give liquidity to banks in times of hardships with an aim of curbing financial problems faced by the construction sector. Additionally, the Minister for Trade and Industry of Oman has advised the industrialist in the country to embrace competition by establishing competitive prices and constructing quality infrastructures. In regard to this to this it is evident that the GCC countries have supported the UAE construction sector in a number of ways (The World Bank Group, 2008).

Consequently, before the cancellation the project was postponed as there was lack of sufficient finance to enable the contractor to continue with the project in order to complete it on time (Squire, 2008, p. 43). Even though the project was finally completed there were delays that further resulted into the total cost being high. Therefore, in regard to this particular case, it is essential to point out that financial management is a key element in project construction and is likely to impact on the performance of the entire work. In line with this, Roderick (2006, p. 15) points out that apart from the economic crisis, delays in payments, inefficient management of the cash flow in the industry, downturn in the existing financial market and insufficient financial resources are some of the factors that result in postponement or cancellation of construction projects in UAE (Naoum, 1998, p. 34). Moreover, the cancellation of this particular project was due to the 2008 economic recession in the UAE and it has one of the key factors that have led to cancellation or postponement of a number of construction projects. Moreover, just as this case study 4, contractors, developers and consultants both experienced financial difficulties due to the fact that they were unable to obtain their payments on time.

Additionally, it is important to note that, this particular project was being funded by foreign development banks. Apart from the economic crisis and high cost of construction materials, the aforesaid construction was further impacted by the aforementioned factor. Moreover, due to the fact that a number of groups were involved in the whole project it

was difficult to manage the project effectively as it became complicated (Squire, 2008, p. 61). Nonetheless, noteworthy key reasons that impede the existing projects in linked to the extremely long duration that pertain to contract evaluation, natural disasters and hiring qualified skilled and unskilled staff.

Moreover, when the project was underway, there was change of design which further resulted in the project being put in hold for approximately 26 days as the plan was being redrawn. Therefore, drawing approvals and poor preparation of the same are some of the factors that caused for postponement of this particular project (The World Bank Group, 2008). In some circumstances the consultants issued incomplete drawings to the constructor an aspect that resulted in the project being postponed consequently, some important aspects were missing in the drawings which were only discovered late when the project had already started and the constructors were forced to put the project on hold. The study further established that other factors such economic, environmental, political and other third party are external factors that contribute to postponement of cancellation of construction projects. However, Squire (2008, p. 23) further pointed out while the aforementioned causes are regarded as external factors, internal factors that are likely to cause postponement or cancellation of construction projects are related to consultants, owner, contractors or other concerned groups involved in the same (Naoum, 1998, p. 34).

From the above study, it is further evident that the postponement was primarily caused by contractors, designers, finance, consultants or clients either directly or indirectly. Moreover, regarding to this particular project, it can be pointed out that the project too was postponed due to unforeseen factors (Sambidge, 2008, p. 53). Generally in most of the construction projects, and case study 4 is no exception, contractors are regarded as liable for all risks which are majorly associated inclement weather and existing services (The World Bank Group, 2008).

In addition to that due to the fact that UAE depend on importing construction materials which are expensive in nature, the project was postponed due to insufficient construction materials. This made the project to be vulnerable as it heavily depended on imported building materials. In addition to that the capability and the capacity of UAE to produce construction materials for its own domestic consumption are limited as a result of the country lacking an industrial base that is strong in nature (Roderick, 2006, p. 15).

## **CHAPTER FIVE: SUMMARY OF THE FINDINGS**

### **Summary of the impacts as drawn from the four case studies discussed above**

From the above case studies the impacts of cancellation or postponement of construction projects can be summarized. First, it is evident that due to project postponement, most of the projects are not completed on time an aspect that causes the construction cost to increase and the contractor is forced to bear the extra cost which can likely result into the project being cancelled as a result of the contractor having insufficient funds to meet the extra cost. Moreover, it is evident that project postponement or cancellation is likely to result in the interim payment being made late as a result of the work being conducted at a slower rate. Moreover, as a result of postponement, labor productivity is likely to reduce too in addition to the professional relationship among the parties involved turning into an adversarial one (Naoum, 1998, p. 34). Moreover, in the situations whereby there is variation or change in the initial project plan, the completed work has to be reconstructed or demolished an aspect that results in postponement of projects and increased costs. Furthermore, the most evident effect is the overrun of the cost of the project in question whereby, there is likely to be additional payment to the contractor as a result of changes in the initial plan.

### **Methodologies for curbing cancellation or postponement of the construction projects in UAE as drawn from the literature review and the case studies**

Researchers have come up with various methodologies for mitigation of cancellation or postponement of construction projects not in UAE but in other parts of the world. In order to curb cancellation or postponement of construction projects, a number of mitigation measures have been proposed by previous researchers. These mitigation methodologies are associated with clients, contractors, consultants and even developers.

One of the proposed mitigation measures is that contractors need to put in place good subcontractors and suppliers in order to avoid cancellation or postponement of construction projects already on progress. Moreover, if the project is big, it is important that the contractors put in place sufficient equipment and workforce. Furthermore, due to the fact that project cancellation or postponements in most cases are as a result of financial deficiencies, it is essential for the contractors to plan for enough capital that will ensure that the project is completed on a timely manner without cancellation or postponement of the same (Sambidge, 2008, p. 56). In some situations it has been pointed out that contractors fail to adopt construction methods that are adequate in nature. Hence, it is important that the contractors make use of construction methods that will ensure that the projects are completed on time without any postponement. Moreover, it is important for the contractors to procure the materials on time in order to avoid putting on hold projects already on progress due to lack of enough materials to complete it (Martin, 2008, p. 72). Hence, in order to curb the problem of late procurement of the construction materials it is important for efficient techniques for timely procurements are put into place. This is due to the fact that the projects used as case study in this particular research were either dynamic or complex. Hence, it is essential that the staff carrying out the project should be equipped with techniques and tools that will make them to be in a position to deal with any challenge that is likely to result in a project being postponed or cancelled if the factors contributing to the same are internal (Mellor, 2008, p. 3).

Moreover, it is evident that the contract and design are usually prepared within the shortest period of time and in a hurry. This in some situations led to postponement or even cancellation of some construction projects as they are either inaccurate or incomplete to be used for construction purposes. Additionally, it is essential to point out that experienced and qualified staff is important for supervision and design team. Moreover, it is essential for the client to evaluate the competence of the contractor in order to avoid awarding contracts based on the contractor with the lowest bid (Martin, 2008, p. 70). Furthermore, contractors who are not competent find it difficult to complete projects that they have been awarded on time. However, the clients have a role to play in

that before a project commences by providing sufficient information in order to avoid making changes that are likely to result in the project being postponed (Mellor, 2008, p. 5). Moreover, it is essential for the client to organize meetings with the contractor with an aim of evaluating the progress of the project and other crucial matters pertaining to the contract and the project as a whole in order to avoid any misunderstanding that may arise and result into the project being postponed or cancelled (Warnock, 2009, p. 13). In line with these a number of researchers recommended the aforementioned mitigation methodologies as effective means of curbing cancellation or postponement of projects within the construction industry.

Projects are constrained by their financial resources which are limited in nature and some organizations have employed a distinct approach that focuses on particular policies with an aim of strengthening the manufacturing sector. Furthermore, the Omani Central Bank has promised to give liquidity to banks in times of hardships with an aim of curbing financial problems faced by the construction sector (Mellor, 2008, p. 3). Additionally, the Minister for Trade and Industry of Oman has advised the industrialist in the country to embrace competition by establishing competitive prices and constructing quality infrastructures. Additionally, it is important for the companies to invest in training, innovation and development and challenge the existing productivity with an aim of increasing efficiency. Therefore, from the aforementioned discussion, it is essential to point out that even though the construction companies should have hope they should work hard towards achieving the same. Consequently, there is need not only to improve productivity but also to regroup and take the availed opportunity to provide workers who have been retained with excellent training. Moreover according to Saleem (2009, p. 43) it is essential for organizations to recognize and accept all the issues that are related to financial downturn. Nonetheless, it is important for them to focus on the future too and concentrate on the areas in which they need to make changes in order for them not to feel the effects again. More importantly, in certain cases it is essential for the companies to prepare themselves for the tough times so that they can avoid cancellation or postponement of construction projects that are on progress (Martin, 2008, p. 89). This can

be achieved by the companies not only getting back to the basics but also revising teamwork principles. However in the case studies used in this particular project it can be pointed out that just before the financial downturn, the construction sector was moving at a fast pace that left the developers and contractors with no room to prepare for any future changes. Hence, it can be pointed out that all the negative elements of the economic crisis there were some positive impacts that should be viewed positively by construction companies. Additionally, just as mentioned by Saleem in the literature review section of this particular dissertation (Sell, 2007, p. 57) not all is lost as there are many experienced and qualified contractors and developers in the market to provide the much needed services despite a number of projects being postponed or cancelled.

# **CHAPTER SIX: RECOMMENDATIONS AND CONCLUSIONS**

## **RECOMMENDATIONS**

The outlined recommendation specific to stakeholders: Project Managers, Developers, Clients, Contractors, Government, and Other Parties.

- ❖ There is need for the project manager, the government, clients and developers to evaluate the competencies of the contractor before awarding the contract.
- ❖ The project managers should ensure that the hired contractors have enough funds to complete the project.
- ❖ Clients should avoid changes or introducing new concepts when the project is already in progress.
- ❖ Clients should not prefer contractors that offer lower prices as they may not be competent in completing the awarded contract.
- ❖ The government should introduce price regulation clauses to prevent price fluctuation of construction materials.
- ❖ The government needs to register all competent contractors and avail the list to the public to avoid unqualified contractors from taking advantage of the clients.
- ❖ Contractors who prepare designs that are not accurate should be fined by both the government and clients.
- ❖ There is need for consultants to check all submittals by contractors and if not in order report the same to the client.
- ❖ There is need for the contractor to control the process of scheduling and planning for the whole project and penalized for any arising inefficiency.
- ❖ There is need for the government to put in place an effective communication system among the consultants, contractors, government, developers, clients and other parties involved in the same.
- ❖ Contractors and consultants need to mobilize competent and qualified staffs in the project so as to ensure the project completion is not postponed or cancelled.

The main aim of this particular study was to examine factors that result into postponement or cancellation of construction projects in UAE. One of these factors was fluctuations in the price of construction materials as well as economic crisis. Hence, for the effective accomplishment of this, the objectives and aim of this particular study were not only set but also used as a guide for the study as a whole. The hypothesis that construction projects in UAE are likely to be completed within the established time frame and the set budget if factors resulting into postponement or cancellation of the same are effectively dealt with was not only developed but has further confirmed the outcome of the study as a whole. The aim of this particular study was to analyze the factors that cause cancellation or postponement of construction project, effects and mitigation methodologies for preventing future cancellation or postponement of the projects within Abu Dhabi region in addition to drawing a number of recommendations with an aim of improving the existing phenomenon of the industry. In line with the same, the objectives drawn below have been established to attain the aforementioned aims. The aforementioned aims have been realized through the case study and the literature review presented in the other chapters of this particular research. Case studies were used to gather data which led to the conclusion that the UAE construction industry has been impacted negatively by a number of factors that have resulted into cancellation or postponement of projects (Sell, 2007, p. 57). One of these factors is the economic crisis and fluctuation in the prices of construction materials (Kumar, 2008, p. 67). However, other factors too were pointed out in the case studies used in this particular research. The sector experienced sudden curtailment of key development as a result of funds unavailability which was reported between the years 2007 to 2008. This made both contractors and developers not to be in a position to meet their financial obligations (Khalil, 2008, p. 56). Moreover, has highlighted in the case studies used in the methodology chapter. Moreover, apart from the aims of the study being set, the objectives too were drawn.

## **Summary evaluation of the objectives of this study**

In summary, the objectives of this dissertation have been achieved as follows:

- ❖ To outline the importance of the construction industry and the effects it has on the UAE economy. The Abu Dhabi emirate was selected as a focus of the literature review and case studies.
- ❖ To analyze factors that result in postponement or cancellation of construction projects in the UAE. Literature relevant to Abu Dhabi and case studies were the main sources of information, supplemented by general contextualization in the UAE.
- ❖ To identify various impacts of the cancellation or postponement of construction projects in the UAE. Postponement and cancellation of construction projects in Abu Dhabi were presented, analyzed and interpreted.
- ❖ To identify suitable mitigation measures for the postponement or cancellation of construction projects. This objective has been attained by analyzing case studies that had these problems.

The aforesaid objective was successfully met through the examined literature review of this particular research. Khalil (2008, p. 80) points out that the construction industry principally focused on Dubai Emirate before spreading to Abu Dhabi which picked up slowly too. The experienced boom was as a result of high response to the increasing demand of real estate sector in UAE prior to the economic crisis. According to a study carried out by Assaf and al He-hejji (2006, p. 67) adjusting price clauses in construction contracts will curb price fluctuation of construction materials. This is a matter of concern due to the fact that prices for construction materials have remained high and thus impacted on the industry negatively as outlined in the almost all of the case studies used in this particular dissertation (Kerur, 2008, p. 19). Nonetheless, regardless of the reason, it is important that both the contractor and the developer are protected against any sort of price fluctuation to avoid cancelation or postponement of business projects as the same impact on the construction industry negatively. This is similar to the mitigation measure

that was mentioned by Kumaraswamy, Miller & Yogeswaran (1998, p. 283) in the literature review section of this particular dissertation as one way of providing protection to the contractor or the developer is by putting in place price fluctuation clauses in the construction contracts. Additionally, there is no security that is issued by the price escalation clause in a number of existing contractors in UAE an aspect that makes the contractors to be exposed increasing prices of the construction materials thus bidding and financing the projects becomes a problem resulting into some contractors cancelling or postponing projects that are already on progress.

Moreover due to the fact that UAE depend on importing construction materials which are expensive in nature, the possibility of projects being cancelled or postponed is usually high. This makes the sector to be vulnerable and in specific to the global shocks due to the fact that the sector heavily depends on imported building materials. Morgan (2008, p. 56). In addition to that the capability and the capacity of UAE to produce construction materials for its own domestic consumption are limited as a result of the country lacking an industrial base that is strong in nature. Therefore, it is important for the UAE government to put in place an effective industrial base that will make it possible for the country to manufacture enough materials to curb the problem.

## **Suggestions for future research**

It is essential to point out that most studies concentrated on the causes or factors that result into cancellation or postponement of construction projects in UAE. In line to this, it is important for future studies to focus on the cancellation of the projects based on aspects such as procurement and not price inflation or economic crisis. Moreover, from this particular study, it is evident that factors such as increase or fluctuation of the prices of construction materials contribute to the cancellation or postponement of construction projects not only in UAE but in also other parts of the world. The fluctuation of the prices of the materials has been attributed to both economic crisis and the aspect of demand and supply. Additionally, there has been great demand of steel from countries which produce

it making UAE to experience an acute shortage that results into fluctuation in the price of construction materials. Kerur (2008, p. 18) reports that fluctuation in the prices of construction materials are as a result of both oversupply and shortage of the goods. Moreover, an increase in the prices of diesel also resulted into the prices of the construction materials due to the fact that the same impacted on the operational costs of the factory. For instance as reported in the case study 2, the price of the concrete was one of the factors that resulted into the project being put on hold and the same was as a result of the increased price of diesel. However (Martin, 2008, p. 89) in his study pointed out that the price inflation of the construction materials within the UAE was majorly caused by economic crisis. For instance in 2008, prices of construction materials increased dramatically. Consequently, the UAE department of planning and economy the price of steel did not reduce despite the presence of reserve in the UAE economy. Kerur (2008, p. 17) however argued that boom in the UAE construction industry further resulted into the prices of construction materials increasing. However, another study indicated that the prices of steel directly influenced the price of mix concrete.

Using case studies this particular research, it is important to point out that construction industries need to think and act effectively in the existing economic environment in order to avoid postponement or cancellation of construction projects. This is essential as the companies will be in a position to survive in both long and short term projects with ease. Moreover, construction companies with ability and vision to act not only decisively but also effectively in order to survive to the existing construction market and the opportunities that the sector provides. Sambidge (2008, p. 56) further reveals that it is essential for construction companies to improve their efficiency by ensuring that they hire qualified staff in as well as putting in place effective financial management techniques. However, contrarily, the case studies used in this particular study revealed that despite high percentage of employees losing their jobs there have been no structured training that have been provided to them. Therefore, future studies can examine the aforementioned aspect.

In conclusion, the evidence obtained from the case studies matches the information presented in the literature review section of this particular study pertaining to factors that result into cancellation or postponement of construction projects in UAE. However, from the above cases, it is evident that the UAE construction have been greatly impacted negatively by factors such fluctuation in the price of construction materials, conflicts or misunderstanding between the contractors, developers or the client. Nonetheless, there are indicators that the economy of the country is likely to improve in the near future. Additionally, despite economic crisis of 2008, the UAE economy has remained strong as compared to other economies in the gulf region an aspect that has enabled developers and contractors hope in the business. Drawn from the analysis throughout this particular dissertation, especially from the case studies used and the literature review presented in chapter 2, it is justifiable to reach into a conclusion that the facts presented to a large extent support the hypothesis that factor such as inflation or increase in the price of construction materials results into cancellation or postponement of construction projects. Moreover, from the study, it is evident that financial crisis and poor financial skills are some of the factors that have impacted negatively in the sector resulting into cancellation or postponement of some of the projects already on progress. As a result, there have been reduced packages, salaries and loss of employment and continued predicaments. There have been unstable transitions of the economy from prosperity to recession and from recession back to prosperity. As a result of this, as noted from the four case studies used in this particular dissertation, there have been shelving, postponement or cancellation of major construction projects due to economic crisis. Moreover, expatriates have been forced to go back to their countries making them to increase the rate of unemployment in their motherlands which to some extent rely on the foreign remittances as sources of income for the countries.

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