

# STRATEGIES TO OVERCOME CHALLENGES FACED IN MANAGING CONSTRUCTION PROJECTS IN THE UNITED ARAB EMIRATES

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## ABSTRACT

*The problems faced when managing projects in the United Arab Emirates (UAE) are investigated and strategies to overcome the problems and improve project performance are recommended. The survey research design was adopted. The data collection instrument was a questionnaire. Data were collected via interviews with experienced personnel who have worked in the UAE construction industry. It was found that a high proportion of projects in the UAE experienced budget and schedule overruns. The findings show several unique challenges exist in managing projects in the UAE. The first is when foreign consultants fail to consider differences of language, culture, religion, customs and preferences, and this lead to disharmony and resentment. The second challenge is project-related issues such as contract documentation, technical details of construction, materials delivery and document approval and permits are not well-planned nor subject to rigorous risk analysis prior to project commencement. Finally, environment-related issues faced are extreme weather conditions which pose a challenge to foreign staff. It is recommended that foreign firms build closer relationships with clients and local authorities to establish trust that would help in a smoother process in obtaining approvals and resolving disputes. It is necessary to employ more foreign labour during Ramadan to compensate for the lower productivity on site due to fatigue and shorter working time. Protective measures must be taken to shield labourers from the intense heat and ultraviolet radiation. Cold water points and salt pills to replenish fluids lost through perspiration should be provided.*

**Keywords:** *Challenges, International Construction, Multi-national Project Management, United Arab Emirates.*

## 1. INTRODUCTION

The Middle East has become an attractive market for foreign architecture, engineering and construction (A/E/C) firms. It is therefore timely to assess the challenges faced in managing construction projects in the Middle East and recommend ways to reduce or overcome them. The aim of this study is to examine the challenges and problems faced when managing construction projects in the United Arab Emirates (UAE). The specific objectives are to: (i) investigate the performance outcomes of construction projects in UAE; (ii) identify challenges and problems faced in these projects; and (iii) recommend ways to reduce or eliminate such issues. The UAE was selected because it emphasis on infrastructure development has resulted in a large number of projects here. Firms planning to undertake projects in the region will benefit from insights into industry practices and frequently faced issues.

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## 2. LITERATURE REVIEW

This study investigated outcomes of projects in UAE. Project outcomes may be measured by cost, schedule, quality and client satisfaction (Konchar and Sanvido, 1998), which are the basic and traditional criteria for measuring and benchmarking project outcomes.

The project management (PM) practices adopted in the projects were also investigated, based on the project management knowledge areas (scope, time, cost, risk, quality, human resources, communications, procurement management and their integration and management of externalities) defined by the Project Management Institute (PMBOK Guide, 2004).

Besides generic PM practices, in multinational construction management, cultural factors also need to be investigated. Understanding and managing cross-cultural factors is imperative for smooth project implementation (Ling *et al.*, 2007, Dulaimi and Hariz, 2011). Recognising and sensibly handling cultural diversity allows efficiency improvements and increases profitability of international projects (Chan and Tse, 2003).

Multinational PM is also subject to the legal framework of the host country. Studies have suggested that the UAE has an underdeveloped law enforcement system (Daoud and Azzam, 1999). This gives rise to out-of-court dispute resolutions that are sometimes enforced unfairly, creating injustices that may damage future relationships between parties. Contractors hesitate to sue clients and consultants who deal with them in an unfair manner, but this caused schedule delays and disputes to arise during project execution (Daoud and Azzam, 1999). Daoud and Hamdani (1988) also observed the misuse of family and political connections in contract award and administration.

Zaneldin (2006) found variances to be the most common problem in the UAE construction industry, caused largely by changed orders and owner-related delays. Faridi and El-Sayegh (2006) identified the top ten significant causes of construction delay to avoid recurring problems or mitigate their impact. El-Sayegh (2008) assessed the risks and recommended proper allocation of risk so that it can be managed proactively and consistently.

## 3. GAP IN KNOWLEDGE

Studies have been conducted to analyse critical determinants of project success in China (Ling *et al.*, 2009), Vietnam (Ling and Bui, 2010) and India (Iyer and Jha, 2005; Ling and Hoi, 2006). Projects in the Middle East have faced setbacks including time delays (Al-Kharashi and Skitmore, 2009) and cultural diversity issues (Dadfar and Gustavsson, 1992). However, no similar studies have yet been done on the UAE and no comprehensive examination yet exists on the challenges faced in managing projects in the Middle East. This research investigates management practices leading to good outcomes in the UAE, seeking to provide insights to help achieve successful projects.

## 4. RESEARCH METHOD

Research may be quantitative or qualitative in nature. This research adopted the qualitative method because understanding a phenomenon from the point of view of the participants and its particular social and institutional context may be lost when textual data are quantified (Kaplan and Maxwell, 1994). The data collection instrument is a specially designed interview questionnaire comprising open ended questions. The open ended questions allowed the interviewees to share their experiences and opinions without constrained alternatives. Data collection method for qualitative research includes interviews, observation and archival research. This study adopted the interview technique as this allowed for extensive discussion and clarification of the questions as well as responses. Respondents were asked to base their responses to the questions on a specific completed project in the UAE. Archival research and observation were ruled out due to the confidential nature of project information. Face-to-face interviews with Singaporean project personnel and e-mail interviews with UAE project personnel were conducted. Using convenience sampling, a list of samples was drawn up. After gaining approval for an interview, the questionnaire was sent to interviewees to prepare. Each face-to-face interview session lasted between 60

and 90 minutes. Interviewees not in Singapore were asked to fill up the questionnaire within three weeks of receipt.

## 5. CHARACTERISTICS OF THE SAMPLE

Twenty four requests were sent to Singapore firms with experience in the Middle East and three agreed to be interviewed. Seven requests were sent to UAE firms and five responded positively. All interviewees were from upper and middle management and had between 6 and 33 years of industry experience, averaging 18 years. All were personally involved in the projects they described. The positions, experience and location of the interviewees are described in Table 1.

Table 1: Characteristics of Interviewees

Interviewee Code	Interviewee Designation	Role of Firm in Project	Interviewee Construction Experience (Years)	Interviewee's Location During Project Implementation
S1	Quality Assurance Manager	Owner's Representative	33	UAE
S2	Senior Vice President (Architectural)	Consultant Project Manager	30	Singapore
S3	Contracts Manager	Consultant Quantity Surveyor	Not specified	UAE
L1	Deputy Project Manager	Main Contractor	18	UAE
L2	Deputy Managing Director	Subcontractor	6	UAE
L3	Head of Projects	Owner's Representative	16	UAE
L4	Design Manager	Main Contractor	6	UAE
L5	Branch Manager	Main Contractor	17	UAE

The interviewees provided information of their completed projects in the UAE, with Singapore firms handling projects in Abu Dhabi and local firms handling those predominantly in Dubai. Table 2 provides details of projects reported by interviewees. Diverse facility types are represented with construction areas varying from 114,093m<sup>2</sup> to 2,672,728m<sup>2</sup>. Selective or invited tenders appear to be most popular as is the traditional design-bid-build (DBB) contract.

Nationalities represented among project teams include Austria, Australia, Canada, China, Germany, India, Lebanon, Malaysia, New Zealand, Pakistan, the Philippines, Singapore and the USA, demonstrating the importance of considering issues relating to communication, human resource management and cultural diversity.

Table 2: Project Details

Interviewee Code	Location	Facility Type	Appointment Method	Contractual Arrangement	Ownership
S1	Abu Dhabi	Infrastructure	Invited	Design and Build	Public-Private Partnership
S2	Abu Dhabi	Office Building with Basement	Selective	Design-Bid-Build	Public Sector
S3	Abu Dhabi	Office Building with Basement	Invited	Design-Bid-Build	Public Sector
L1	Al Ain	Infrastructure	Selective	Design-Bid-Build	Public Sector
L2	Dubai	Residential	Open	Supply and Install	Privately Owned
L3	Dubai	Commercial	Selective	Design-Bid-Build	Privately Owned
L4	Dubai	Hotel	Selective	Design-bid-Build	Privately Owned
L5	Dubai	Residential	Open	Design-Bid-Build	Privately Owned

## **6. RESULTS AND DISCUSSION**

The projects reported by interviewees cost between AED 335 million (AED1  $\approx$  US\$0.27) and AED 2.1 billion, averaging AED 783 million. The first objective of this study is to investigate the performance outcomes of construction projects in UAE. According to the interviewees, the majority of projects met quality expectations, but this should be viewed with circumspect because interviewees may be biased. Five out of seven experienced project delays, and cost overruns, which may signify ineffective cost control or budget underestimation. Projects took between 23 and 54 months to complete, with a mean of 35 months. Five interviewees reported poor schedule performance and delays which led to cost escalations.

The second objective of this study is to identify challenges and problems faced in projects in UAE. The interviewees shared that the unique culture and work practices in the UAE and its internationally diverse workforce present considerable challenges. The interview findings are presented and discussed below.

### **6.1. SCOPE MANAGEMENT**

Interference by owners despite their inexperience and lack of expertise is a contributor to scope variation, as are repeated changes in requirements to conform to local regulations or changes in owners' demands. Disputes often arise due to discrepancies in architectural drawings and bills of quantities with the local practice more focused on the latter. This results in delays in execution and avoidable rework leading to budget overruns.

### **6.2. SCHEDULE MANAGEMENT**

The local practice is to provide daily, weekly and monthly progress reports supplemented by Gantt charts and frequent meetings to track project progress. Many interviewees felt that they frequent progress reports, printed in hardcopy for wide distribution is environmentally unfriendly and waste personnel time in preparing them.

Extreme weather conditions in summer present a challenge to workers as do sandstorms. To protect workers from dehydration and heatstroke, work in the sun is prohibited between 12pm and 3pm by law and working hours vary by season, with summer timings beginning as early as 2am in two shifts. Concrete is usually poured at night during the summer. Extra rollers are used to compact asphalt in the winter to keep it from cooling too fast. Working hours are generally reduced during Ramadan because of fasting from sunrise to sunset.

### **6.3. QUALITY MANAGEMENT**

Quality management is performed by having stringent criteria for contractor selection. Criteria for selection include financial capacity, experience, existing contract capacity, manpower and resource commitment and bid price. Soft skills are also an occasional consideration. In some instances, selection was not purely based on merit.

### **6.4. RISK MANAGEMENT**

Financial hardship was faced in the UAE during the global economic crisis of 2008. When cash flow was affected, construction activities were halted or slowed down. Some clients were unable to raise funds to complete their projects.

Technical risks include variation in the practice of material use; for example, manholes in Singapore use reinforced concrete while in the UAE, fibre-reinforced concrete is used to prevent rusting and salt deposition. Public utilities not marked on drawings provided by local authorities were often damaged during construction, indicative of an underdeveloped regulatory mechanism in the UAE (Daoud and Azzam, 1999).

Foreign interviewees felt that political risk is substantial because the Middle East is politically volatile and the threat of war is ever-present. Interviewees relied on the Multilateral Investment Guarantee Agency (MIGA) which offers political risk insurance for foreign investments in developing countries.

### **6.5. HUMAN RESOURCE MANAGEMENT**

Locals and expatriates are estimated by interviewees to be in the ratio of 10:90, described by one interviewee as a “mini United Nations”, agreeing with Daoud and Azzam’s (1999) observation. The low-paid labour force struggles both financially and psychologically to survive in a nation with one of the highest costs of living in the world. Conflict of opinion frequently arise due to this multicultural workforce and are usually dealt with through closed-door meetings until a mutually agreeable directive is reached for future use. Recourse to legal or contract solutions is not usually preferred. Cash incentives for good work and timely payments are used to keep employees motivated.

### **6.6. COMMUNICATION MANAGEMENT**

While Daoud and Azzam (1999) noted that communication barriers were significant due to language constraints but this research does not support their findings, possibly because the English-speaking client and project team communicate with the site supervisors, who pass on the instructions to the foremen and workers in their native tongue. Although the use of English is widespread in the UAE, speaking skills generally outpace writing skills. Sign language, actions, illustrations, technical drawings and translation by workers who are more fluent are all methods adopted to communicate.

Singaporean interviewees shared that their project teams in UAE keep their headquarters updated through electronic communications media. At the personal level, the communication issue becomes acute when project durations stretch for long periods and foreign staff with little time or money to travel home are separated from their families.

Apart from language and communication tools, cultural differences in communication style have led to occasional difficulties. Westerners prefer problems to be verbalised and addressed rigorously, while locals tend to adopt a more quiet approach. Many foreigners mistake locals’ quietness to passiveness when in many instances, this is not the case, but that locals do not like the fast and noisy approach. This has hampered the smooth working relationship in international teams. Experience in cross-cultural environments is definitely an advantage for international projects.

### **6.7. PROCUREMENT MANAGEMENT**

Many interviewees reported that materials delivery is subject to arbitrary schedule changes to accommodate demands of more important projects, although extensions are granted when this happens. Importing materials already supplied from Abu Dhabi is prohibited. These factors affect both scheduling and cost. Late orders by contractors and delayed customs clearance also pose barriers to timely procurement.

Interviewees shared that foreigners need to establish close relationships with local decision makers to gain their trust first before they are awarded projects. Establishing good interpersonal relationships and trust with local project partners is very helpful since such ties are highly valued in the region.

### **6.8. CROSS CULTURAL MANAGEMENT**

Dispute resolution is typically based on good faith practices rather than legal recourse. The interviewees shared that being late for appointments is a common phenomenon among locals. They reiterated the idea of verifying meeting times with local participants to ensure their attendance. Respect for local culture and practices, including prayer timings and abstaining from non *halal* food and alcoholic drinks, are appreciated and help gain trust. Long-term relationships with business partners are valued regardless of ongoing economic constraints. Interpersonal relationships help to get jobs done faster or better and contribute significantly to project success. Often, specific companies are selected to carry out tasks because of personal connections which indicate that trust had already been built up successfully. Because of these constraints, training and mentorship are challenging to come by, though experienced professionals may find promising career opportunities.

## **6.9. THE LEGAL SYSTEM AND APPROVAL PROCESS**

Interviewees noted that often, regulations change after contracts are awarded. Some new regulations that recently come into force affect travel times for heavy vehicles, fire safety and workers' welfare. The rapid modification and introduction of regulations without adequate notice shows an immature legal system. Often, international laws that are not entirely suitable for the UAE context have been significantly customised to serve local needs.

The interviewees shared that the application processes to obtain authorities' approval is lengthy. Interviewees observed that a personal approach is often more efficient. Prompt and persistent follow-up actions are important to obtaining permits and licences in a timely manner.

## **7. RECOMMENDATIONS**

The third objective of this study is to provide recommendations on ways to reduce or eliminate challenges and issues faced in construction projects in the UAE. The interview findings on the recommendations are discussed below.

### **7.1. RECOMMENDATIONS TO UAE CLIENTS**

The study found that many UAE clients do not have high level of understanding of project management practices and techniques. There was uninformed intervention in how work is done and extensive variations, which in turn contributed to project delays and rising costs. It is recommended that clients ensure that project objectives are well-defined from the inception stage and that these objectives are communicated to project team members so that all participants work towards a common goal.

The appointment of competent key players in the project is essential to increasing the chances of project success. Clients are recommended to select contractors and consultants based on merit and not relationship. The selection criteria for contractors could include their financial capacity, relevant experience, existing contract capacity, and manpower and resource commitment in addition to bid price.

### **7.2. RECOMMENDATIONS TO UAE CONSULTANTS**

Local consultants should make more effort to understand and prepare comprehensive and detailed contract documents instead of relying heavily on foreign consultants who are not familiar with local conditions. All parties involved in the project should be familiar with their contractual obligations to avoid ambiguous scope of work. As foreign players enter the construction market, local consultants should work towards upgrading their skills and professionalism to retain their competitive advantage.

### **7.3. RECOMMENDATIONS TO CONTRACTORS**

When dealing with the internationally mixed workforce in the UAE, failure to account for diversity of language, culture, religion, customs and preferences can create disharmony and resentment. Ambiguous or imperfect communication can hinder project progress, especially when language barriers exist. It is recommended that site supervisors who are able to converse in English with management and translate instructions in workmen's native tongue be employed in this multilingual setting.

Extreme weather conditions in the UAE may pose a challenge for foreign workers to adapt, especially in the initial stages of a project. Protective measures must be taken during the hot, dry summer season to shield the labourers on site from the intense heat and ultraviolet radiation. The welfare of workers is vital to maintaining high productivity and should therefore be addressed appropriately. In addition, workplace safety practices should account for *force majeure* situations such as sandstorms. It is recommended that salt pills to compensate for excessive perspiration, air-conditioned break areas, cold drinking water, sun protective materials, shaded areas and personal protective equipment (PPE) are all used.

It is important to factor in low output periods when scheduling construction work. These are the high summer and Ramadan. Omissions or miscalculations can result in undesirable cost and schedule overruns.

UAE contractors may find it necessary to employ more foreign labour to compensate for the lowered productivity on site during Ramadan.

Technical risks have to be carefully analysed and promptly addressed as the differences in geographical location and other physical factors may require changes to the materials or method of construction used. Familiarity with the FIDIC is recommended as this will be an advantage in getting a clear idea of the issues, such as the priority of award to be followed in the event of a discrepancy between drawings and documents.

#### **7.4. RECOMMENDATIONS TO FOREIGN COMPANIES INTENDING TO OPERATE IN UAE**

This study found that it is difficult to be awarded a UAE construction project without referrals. A good approach recommended to first-timers desirous of venturing into the UAE market is to work closely with firms that are already established in the UAE. Otherwise, it will be considerably hard to gain trust from clients.

Establishing interpersonal relationships and ties is also critical to advance smoothly in the resolution of disputes or getting work done. It is advisable to make use of political ties for assistance in obtaining permits and licences faster.

The UAE has a multicultural workforce and it is recommended that foreign personnel be sensitive to cultural differences, showing respect and consideration for the religious beliefs of others, going so far as to observe the same dietary restrictions if required as a show of good faith and to avoid conflicts between groups that could jeopardise the project.

### **8. CONCLUSIONS**

Project outcomes in the UAE typically fail to meet satisfactory levels due to the high frequency of cost and schedule overruns. Only a handful of projects are completed within budget and on schedule with high output quality and owner satisfaction. A combination of human resource, project management and environmental factors affect the execution of projects in the UAE. The nine knowledge areas of project management practice are critical to improving the chances of project success. In addition, acknowledgement and adherence to cultural requirements in the region, including the building of more personal relationships, will significantly enhance the likelihood of project success and the ease with which foreign firms may enter and grow in the UAE construction market.

In conclusion, choosing the right team players from the start of the project is a determinant step in establishing a good working relationship that influences the project outcome to a large extent. Further, the establishment of this strong relationship not only leads to a successful project outcome and client satisfaction but is key to the extension of the relationship to future projects as trust builds.

The main limitation is the qualitative nature of the findings, and the primary data comprises interviewees' narrative answers. This made it difficult to provide empirical evidence to support the findings. Future research could consider a quantitative research involving many local and foreign firms operating in UAE.

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