CONTRACT MANAGEMENT BEHAVIOR OF TURKISH CONSTRUCTION COMPANIES IN INTERNATIONAL CONTRACTS

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ABSTRACT

CONTRACT MANAGEMENT BEHAVIOR OF TURKISH CONSTRUCTION COMPANIES IN INTERNATIONAL CONTRACTS

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Contract management starts with the contract negotiations and lasts until the end of the contract, and is the process that covers three fundamental functions required to compensate the goals of the project; Relationship Management, Project Delivery, and Administration of the contract. This thesis focused on investigating contract management behavior of Turkish construction companies in international projects.

A survey was composed and interviewed with professionals for investigating the contract management behavior of contractors. The survey aimed to investigate; factors influencing contractors' behaviors, key success factors for contract management, company contract management organizations, claim issues, and conflict and dispute behaviors of firms. 51 companies participated to the survey.

The survey results revealed that Turkish contractors consider contract management to be significant for success at international markets. Contractors are aware of the need for a continuous contract management application although this rate cannot be achieved in practise. Considering awareness as a driving factor for improvement it can be estimated that in future Turkish contractors will be managing their contracts in more efficient, organized and systematic ways than today. Results revealed that; contract management behaviors are mostly affected by the risk and complexity of the Project, regular contract process is the most impactful process on the success, and change order requests of the owners are the most frequent reasons of claims. According to respondents contract management can reduce number of conflicts and disputes.

Keywords: Contract Management, Turkish Construction Sector, Contractual Relations, Project Delivery, Contract Administration

ÖZ

TÜRK İNŞAAT ŞİRKETLERİNİN ULUSLARARASI SÖZLEŞMELERDEKİ SÖZLEŞME YÖNETİMİ DAVRANIŞI

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Sözleşme yönetimi; sözleşme oluşturma müzakereleri ile başlayıp, sözleşmenin sonuna kadar devam eden ve sözleşme konusu hedefleri karşılamak için gerekli olan İlişki Yönetimi, Proje Teslimi ve Sözleşmenin İdaresi temel fonksiyonlarını içeren süreçtir. Bu tez çalışmasının odağı, Türk inşaat firmalarının uluslararası projelerdeki sözleşme yönetimi davranışının incelenmesidir.

Türk yüklenicilerin sözleşme yönetimi davranışlarını incelemek üzere bir anket düzenlenmiş ve sektör çalışanları ile görüşmeler yapılmıştır. Anket ile müteahhitlerin davranışlarını etkileyen faktörlerin, sözleşme yönetiminde başarı için anahtar faktörlerin, şirket sözleşme yönetimi organizasyonlarının, hukuksal talep konularının ve firmaların anlaşmazlık ve ihtilaf durumunda davranışlarının incelenmesi amaçlanmıştır. Toplam 51 firma anketi cevaplamıştır.

Anket sonuçları Türk yüklenicilerin; uluslararası pazarlarda başarı için sözleşme yönetiminin öneminin, farkında olduklarını açığa çıkarmıştır. Yüklenicileri, her ne kadar mevcut uygulamada bu orana ulaşılamasa da, sürekli sözleşme yönetimi uygulamasının gerekliliğin de farkındadırlar. Farkındalığın ilerlemenin taşıyıcı faktörü olduğu göz önünde bulundurulursa, yakın gelecekte Türk yüklenicilerinin, sözleşmeleri bugüne göre daha etkin, organize ve sistematik yollar ile yönetecekleri tahmin edilebilir. Sonuçlar; sözleşme yönetimi davranışının en çok projelerin risk ve karmaşıklığından etkilendiğini, olağan sözleşme sürecinin başarıda en etkili süreç olduğunu ve idarenin değişiklik taleplerinin hukuksal taleplere en fazla yol açan sorunlar olduğunu ortaya çıkarmıştır. Katılımcılar sözleşme yönetiminin anlaşmazlıkların azaltılmasında etkili olduğunu düşünmektedir.

Anahtar Kelimeler: Sözleşme Yönetimi, Türk İnşaat Sektörü, Sözleşmesel ilişkiler, Proje teslimi, Sözleşme İdaresi

To my Parents

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LIST OF ABBREVIATIONS

ADR	Alternative Dispute Resolution
CII	Construction Industry Institute
ENR	Engineering News-Record
ICE	The Institution of Civil Engineers
ICI	The Istanbul Chamber of Industry
INTES	The Turkish Employers Association of Construction Industries
OFPP	Office of Federal Procurement Policy
OGC	The Office Of Government Commerce
TCA	Turkish Contractors Association
USD	United States Dollar

CHAPTER 1

INTRODUCTION

“There was indeed a time, remotely within the memory of older professionals, when the continuous availability of profitable work enabled the more relaxed view to prevail. In those days a profit rising to 10% on turnover enabled contractors to turn away from old contentions in order to accept new work which in administrative terms was more rewarding than the prolongation of existing disputes. Final account negotiation was relatively restricted.

It was not unknown for smaller contracts to be settled for the tender sum without remeasurement. Good relations and the progressive escalation of the contractor to higher tender listings were then the primary object. Contractors in the main operated with their own plant fleet and directly employed operatives, and sought to foster their own domestic subcontractors by providing them with a continuity of employment.

In those mostly forgotten days, dispute and particularly arbitration were regarded as an ultimate breakdown of relationships. A 'claims-conscious' contractor was likely to have his opportunities quickly curtailed. It is evident that the exact provisions

> of the ICE contract[1], formulated to give a fair distribution of risk, an absolute right of claim and reasonable recovery of extra cost, were largely ignored. There could be few industries with less basic awareness of their fundamental 'rules of engagement'. The thought of turning to a third party for an enforceable solution was offensive, particularly to the engineer and employer, even though arbitration was specifically provided by the contract as a means of gaining early relief from disagreement or abuse of the engineer's powers." (Read et al., 2004)

A project is a dream of the owner and contracts are the languages that the owners share their dreams with the other parties of the project. As Barlow states (1998) construction projects are organized by different parties linked hierarchically together by contracts with highly restricted terms and conditions (cited in Li et al., 2001). Thus a project may be called as a temporary nexus of contracts (Turner, 2006). Therefore contractors - who undertakes a contract to provide materials or labor for a job as defined in Compact Oxford English Dictionary of Current English – while competing to receive project awards, bid for construction contracts (Ki, 2003). Ki also cites from Skitmore (1991) that, construction market is a contract market where construction clients, who are regarded as contract sellers, sell their works contracts to contractor, who are regarded as contract buyers.

According to Harmon (2003), the parties of a construction contract, the owner and contractor, are a society with a complex set of interrelated relationships requiring cooperation and collaboration to coordinate time, resources, and communication. Participation of these parties in a project is governed by a contract, which defines the exchange of construction materials and services for money (Mitropoulos and Howell, 2001). Contract documents, which detail technical as well as business relationships, are the framework of the working

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[1] *Standard conditions of contract for civil engineering works of "The Institution of Civil Engineers", (www.ice.org.uk)*

relationship of all parties to a project (Smith, 2003) and consequently are the most important elements in the construction sector as they not only define all aspects and a fair relation between each party to accomplish successful projects but also guarantee the healthy development of the sector and its partners (Sertyesilisik, 2006). It should be noted that the ultimate goal of project management is to ensure commercial success (Grutters, 2007) and the design of the project contract has a major impact on the economic success of both parties and on the behavior of the parties in their attempt to maximize their upside or protect themselves from a downside (Branconi and Loch, 2003).

During the last few decades, construction projects have shown a trend towards becoming large complicated operations involving many parties (Shohet and Frydman, 2003). construction projects are becoming more and more complex due to new standards, advanced technologies, and owner-desired additions and changes (Abdul-Malak et al., 2002), while having to be performed in a wide geography that contractors encounter different laws, languages, practices and cultures throughout their operations (Sertyesilisik, 2007). Moreover, the market and organizational structure of the construction industry is highly fragmented and divisive where a large number of medium and small sized firms, make it a highly competitive environment (Li et al., 2001). In such a complicated and competitive market, the construction business today suffers from low margins and has difficulties making projects profitable (Harris and McCaffer, 2001 cited in Anderson and Gunnarsson, 2002). Zack Jr. (1993), referring to two surveys (1970, 1984) argues that; the pretax margin for construction contractors, from the 7-10% level has eroded to approximately the 2-4% level, which is a significant decline. Zack Jr. further states “In fact, it has been determined that net income has declined to the range of 1.0-1.4% of revenue ("Financial" 1991)”. However as Ki (2003) quoted from Raftery (1991) and Needham (1970), profit maximization is traditionally accepted as the primary objective of the firm operating in a perfectly competitive market and firms strive to earn profit in the very long run and the objective of the firm is either profit, sales revenue or

growth rate maximization. Al-Juwairah in his thesis (1997), gives the importance of the profit for a business and also construction company: “Based on Kangari work it can be said that bad profits account for slightly over half of all business failures. Bad profits are also one of the most important causes of business failures in the construction industry”. Nothing stands still in the world of commerce (Ribeiro, 1996), therefore in today’s very competitive markets, where competition is an important point of concern for many business operations, firms have to do their best in order to survive (Ozlen, 2003). On the other hand in an environment where continuous improvement is vital for both survival and progression, contracting organizations have been criticized for being incapable to learn from experience and improve (Wong and Cheung, 2007).

According to Semple et al. (1994) existence of great deal of conflict within the construction industry is understandable due to its very complex, high-risk, and multiparty nature. The Stress on the shoulders of players of the construction market due to increased sophistication, strong competition, declining profits and the need for improvement, leads to a more adversary market environment. Zack Jr. (1993) explains one of the results of decreasing profits as “… more projects end up in major disputes now than at any time in history. It has been suggested that the project's dedication ceremony is no longer at the end of the job, but at the beginning of the final phase of the project: the dispute phase”. It should be noted that all parties to the contract has its own interest to the project, even though they join forces to bring to life a project and have one common goal; which is to complete the project (Al-Barghouthi, 1994), and this diversity of the parties, that they tend to have their own goals and objectives, results in conflicting and adversarial relations (Li et al., 2001). As a result of this adversary relations and environment, management of construction claims, or “claimsmanship”, which revolves around two basic tenets: “What's mine is mine, what's yours is negotiable”; and “if you don't ask, you won't get”, has grown as a new project-management style or tactic (Zack Jr., 1993). The dramatic result of

this as given by Read et al. (2004) is: "The boardrooms of contracting organizations are filled with accountants and legal executives who (rightly, on their own terms) believe that every contractual entitlement must be applied, and that every claim potential must be exaggerated in order to maximize the company balance sheet and give confidence to banks and creditors". Read et al. further reflects this dramatic situation from Abrahamson's words (1979):

> "It is very sad that the situation has been reached where it can even be suggested of a great industry, as it has been that efficiency in the pursuit of payment pays better than efficiency in site work. And this problem should not be represented as a conflict between the interests of contractors and the interests of engineers and employers. Neither side of the industry benefits. Contractors do not make more profit overall, because competition ensures that in seeking contracts they allow in their starting prices for the money to be earned at the end in claims."

Ng et al. (2007) depending on several previous researches (Thompson et al. 2000; Cheung et al. 2002; Harmon 2003; Fenn et al. 1998; Ock and Han 2003; Mitropoulous and Howell 2001) states, as a result of an adversarial environment exists within construction industry, conflict is unavoidable and one major critical characteristic of the construction industry is the high cost incurred by the resolution of arising conflict and lawsuits in projects, hence project managers should actively focus on avoiding and preventing conflicts from escalating into claims and resolving claims to prevent them from becoming disputes and lawsuits. Supporting this notice of Ng et al. Al-Juwairah's study (1997) displays contract management, which is given in the corresponding study as managing the total resources of a project as well the content of the contract to avoid any dispute, as one of the five most severe factors affecting construction cost as agreed by consultants, contractors and owners where the remaining four are; cost of materials, incorrect planning, previous experience of the contract, and Poor financial control in site. Al-Juwairah, notes the importance of contract management as a vital element for a successful project. Turner (2006) also presents "Project Contract Management" as an inherent

component of project management in his series of papers through which he investigates for “a theory of project management”.

From what has driven up to here the emergence of contract management can be illustrated as it is given in the Figure 1. The U-shaped path is the path that the contractor’s profit may follow, where the half on the left represents so called “good old days of high profits” and is past. The right half on the other hand represents claimsmanship which is a relatively aggressive and sometimes opportunistic way of project management that focuses on own interests rather than seeking mutual benefits. The circle which is “the profit” in this case was initially at a comparatively high point on the left hand side, until the changing environment of increasing competition acts as a gravitational force and pushed the profit down. The profit once pushed down from the left wall might attempt to climb up through claim management wall on the right. However this attempt to increase the profit, once again would be responded by a perhaps even stronger gravitational force, which is the costs of adversary environment, conflicts and potential litigations. Under the influence of these downward stresses the profit is supposed to settle at the flat area in between. This area naturally evolves and its comparative depth depends on the contract management capabilities of the firms. It is vital to note that: This flat area is not the ground where the profit maximizes but it is the ground that the profit optimizes. At what level does the profit optimizes is still a result of contract management talents of the team.

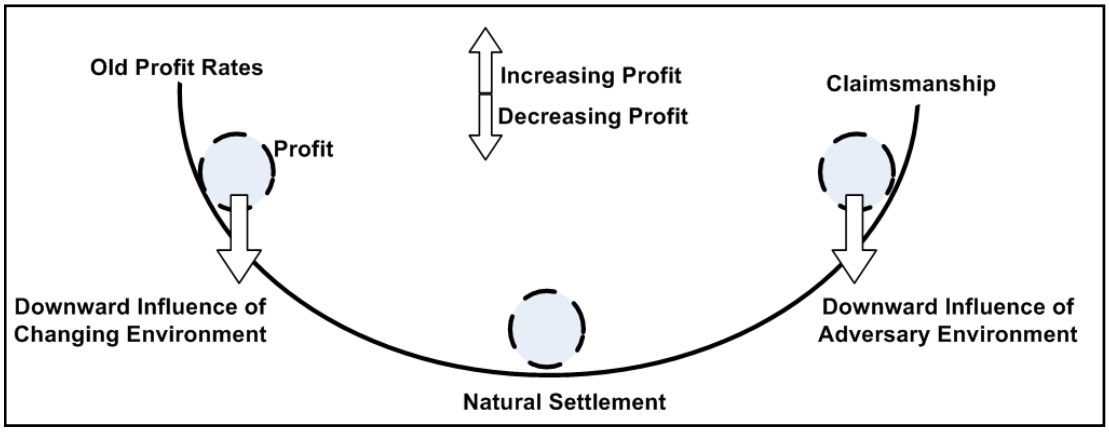


Figure 1 The Emergence of Contract Management

Turner in his previously mentioned series of papers (2006), confesses how he find it interesting that, even though it is one of the inherent components of project management, the contract management is also one of the most widely ignored parts of the project management. The reflection of this interesting point that Turner figures out, on Turkish construction sector is the foundation that this thesis study constructed. This reflection comes up with several questions: How does the Turkish construction sector approach to the concept of the contract management. Do the Turkish contractors ignore it or at least they are aware of its emergence? Is there any successful contract management implementation if they are already aware of the importance of it? What are the factors that release or restrain their behaviors and what are the factors that they believe are to be critical for successful contract management. How do they organize for a successful contract management and does it make a difference? Finally what are their headaches, that they struggle with most and how do they handle them? In order to be able to answer these questions a survey is composed and interviewed with sector professionals. International projects are targeted to be the scope of the study and interviewed professionals were asked to respond the survey considering these projects only. Throughout the thesis; following a theoretical investigation of the concept of contract management, the

results of this survey and the answers for the questions presented above (as they were derived under the scope and the limitations of the study) are disserted.

Branconi and Loch (2003), marks that Project management literature treats contracts largely as a technical issue, rather than characterizing priorities like: "How is the project's business related to the contract?" During the literature research done parallel to this study it was found that this point is true and besides the contracts it is further valid for contract management. First, the literature mostly focuses on issues that has a direct impact on project success such as contract clauses, claims, delays, resolutions of disputes. Second, the literature handles these issues in a technical manner and it mostly presents checklists or procedures to be followed by the professionals. Moreover the literature frequently investigates previously experienced cases and tries to formulize these examples in order to supply route-maps to professionals. The literature dealing with contracts and contract management in a conceptual manner is relatively little. To clarify the implied, it can be said that the literature rather than discussing "what is the relationship between the parties", and its place in contract and project execution, discusses contract clauses about it and what to do when a conflict arises. Before presenting the results of the survey which draws the picture of the contract management behavior of Turkish construction sector in international contracts, this study first tries to focus on the concept of the contract management as a whole, and seeks the answer for the question: "what is it?" The aim is to give the reader, the opportunity to justify the behavior after having an understanding about the topic. Those readers who would like to find the answer of the question "how to do it?" for various elements of contract management may deepen their investigation through references cited.

Following this chapter, in the second chapter the concept of contract management is investigated under its three main tasks which are relationship management, the project delivery, and the administration of the contract.

At the third chapter contract management behavior of Turkish contactors is studied. The roots and influencing factors of this behavior such as the bureaucracy in Turkey are argued on a theoretical background in order to base a better understanding on the upcoming results of the survey.

The fourth chapter introduces the survey, and its elements e.g. justification of the questions, the limitations, and the interviewing process. After they clearly informed about the research, the readers will have the power to question the results and they will have the freedom to accept or reject them.

The Fifth chapter displays the results of the survey which is interviewed with 51 Turkish contractors. The pure data gathered, after processed with statistical methods and converted to more meaningful information presented and commented here to be served to readers' knowledge.

The last chapter is the conclusion of the study. The study itself is evaluated and recommendations for further research that thought to may be reasonable and valuable are noted in this very last chapter.

CHAPTER 2

CONTRACT MANAGEMENT IN CONSTRUCTION

The Contract is a summary of the legal provisions that must be observed during the project (Grutters, 2007), and functions as an instrument for communicating obligations, terms, specifications, responsibilities, conditions and roles of the ethical and moral code that governs the business relationship between the contracting parties (Zaghloul, 2005). Contracts define the various aspects, obligations and relations between each party that are necessary to reach a common expected goal hence one of the most important tools in the construction sector and contribute to successful completion of projects (Sertyesilisik, 2007).

New regulatory requirements, globalization, increases in contract volumes and complexity, as noted by Aberdeen Group (2004), have resulted in an increasing recognition of the importance and benefits of effective contract management (cited in: Elsey, 2007). For successfully completion of the construction project, the contracting parties should be aware of all activities involved in a proper contract management and also importance of it (Usta, 2005). However, Smith (2003) notes that: “when evaluated on the basis of their knowledge of contracts;

many of the professionals do not understand the importance of the contract language that forms the basis for their relationship with the owner or with each other." Grutters (2007) also marks this circumstance, and points that, besides the technical clauses, the legal or commercial sections as well endanger the success and this stretches the engineers who do not have the legal or commercial training required, however because lawyers cannot provide monitoring during construction work, this is rather the responsibility of the construction management. Therefore the Project Manager must receive legal instructions on difficult Contractual elements before the project starts (Grutters, 2007).

Anderson and Gunnarsson (2002), argues that the role of a contract manager is not defined or evaluated in the literature. Neither its primary element contract management is. However especially commercial documents of various organizations widely treat relevant issues that if alternatively discussed, these issues would converge to a definition and explanation of contract management and the contract manager. Such issues are some limited definitions of contract management, given goals, activities and benefits of contract management. Following are these issues, that shaped the definition for contract management concluded in this study, as they are discussed in the referenced documents;

Yurt (2005), in her thesis, defines contract management as:

> "Contract management is the complete and exact understanding of contract clauses, and is execution of them during the construction in order to minimize possible disputes between the parties. In other words it is the process of generating solutions for disputes that may arise during the execution (Fisk, 2003)."

Office of Government Commerce (2002) defines contract management as:

> "Contract management is the process that enables both parties to a contract to meet their obligations in order to deliver the objectives required from the contract. It also involves building a good working relationship between customer and provider. It continues

throughout the life of a contract and involves managing proactively to anticipate future needs as well as reacting to situations that arise."

Elsey (2007) notices that, successful contract management, is most effective if upstream or pre-award activities are properly carried out and time and effort must be spent on determining how the contract will work once it has been awarded, however there are a number of definitions of contract management, the majority of which refer to post-award activities. Elsey defines contract management as:

> "Contract life cycle management is the process of systematically and efficiently managing contract creation, execution and analysis for maximizing operational and financial performance and minimizing risk"

In addition to the definitions, Yurt (2005) gives two approaches to the goal of the contract management as:

> "The goal is to ensure execution of any construction contract as it was signed by the parties (Uyanık, 2004)."
>
> "The main goal is, within the policies and strategies adopted initially, effectively ensuring the contract to achieve its targets without exceeding the defined time and cost and without having conflicts."

The goal of contract management as given by OGC (2002) is:

> "The central aim of contract management is to obtain the services as agreed in the contract and achieve value for money. This means optimizing the efficiency, effectiveness and economy of the service or relationship described by the contract, balancing costs against risks and actively managing the customer–provider relationship. Contract management may also involve aiming for continuous improvement in performance over the life of the contract."

Where benefits given by OGC are as:

> "Good contract management goes much further than ensuring that the agreed terms of the contract are being met – this is a vital step,

> but only the first of many. No matter what the scope of the contract, there will always be some tensions between the different perspectives of customer and provider. Contract management is about resolving or easing such tensions to build a relationship with the provider based on mutual understanding, trust, open communications and benefits to both customer and provider – a 'win/win' relationship."

According to Office of Federal Procurement Policy (1994) the goal and benefit of contract management are:

> "In contract administration, the focus is on obtaining supplies and services, of requisite quality, on time, and within budget."
>
> "Good contract administration assures that the end users are satisfied with the product or service being obtained under the contract."

Furthermore, to facilitate the derivation of the definition of the contract management, it is worthwhile to mention the role of the contract manager that is developed by Anderson and Gunnarsson (2002):

> "The main responsibility for a contract manager is to follow up contractual circumstances with client and subcontractors. The main work routines are to establish contract administration systems, identify critical contractual circumstances, handle variations and additional work and notify the client of variations. A contract manager should establish understanding for and raise awareness of contractual issues in the project organization. To conclude, a contract manager will ensure that variations and additional work are taken care of in an optimum way. A contract manager will alleviate the workload of project managers, strengthen the relation between different actors and prevent conflicts and misunderstanding through better contract knowledge. This knowledge is also beneficial for actors in the global construction market where new standard forms of contracts are in use. A contract manager should work preventively and strategically with contracts and be an engineer who is interested in commercial and legal matters in order to identify opportunities of making business."

Considering all above definitions, goals and benefits of contract management and the role of the contract manager, it can be noticed that three major points easily greets the reader. These three points that contract management strongly relevant are:

- The relationship between the parties,
- Requirements of the agreement, and
- The contract itself.

The contract management thus is expected to, aim to successfully capture any benefits regarding these three headings during its execution. In other words, it should run three different functions simultaneously for a complete achievement where all relevant issues are adequately and effectively handled. OGC (2002) as well underlines these three functions:

> "Contract management activities can be broadly grouped into three areas.
>
> - Service delivery management ensures that the service is being delivered as agreed, to the required level of performance and quality.
> - Relationship management keeps the relationship between the two parties open and constructive, aiming to resolve or ease tensions and identify problems early.
> - Contract administration handles the formal governance of the contract and changes to the contract documentation.
>
> All three areas must be managed successfully if the arrangement is to be a success. In addition, good preparation and the right contract are essential foundations for good contract management. The arrangement must also be flexible enough to accommodate change."

As a result of all these discussions, the definition of the contract management used in this thesis converged. This definition of course is specific to this study and does not necessarily have to cover any further meaning that might be

charged to concept of contract management in any other study. On the other hand it is found to be adequate and able to cover the content in the sense that this study perceives contract management. The definition is as follows:

Contract management starts with the contract formation negotiations, lasts until the end of the contract, and is the process that covers three fundamental functions required to compensate the goals of the contracted project.

- **Relationship Management:** To provide an agreement between the parties in sharing and fulfilling the obligations and to adjust the relationship in between.
- **Project Delivery:** To ensure that the maintenance of the obligations and the completion of project targets are as in the contract.
- **Administration of the contract:** To perform contractual bureaucratic procedure. (Recording, preparation of forms, communication, etc.)

Exact understanding, fulfillment and control of contract clauses, settling and recording the changes that may arise during application, minimization of risk by foreseeing of future needs and development of appropriate strategies in case of unexpected situations are all involved in this process.

Further in this chapter, the contract management concept is investigated through these three functions.

2.1. Relationship Management

Shively (2000) states that for the Employer-Contractor relationship to be successful, well defined agreements or contracts need to be in place (Cited in Usta, 2005). The contract's clauses define many relationships between the parties in administrating the contract (Krone, 1991); construction contracts

thus determine the basis for the relationships between these parties (Semple et al., 1994). In other words they are the primary foundation in virtually every relationship in the world of construction and in entering into a contract, the parties effectively make the law that will define their roles and govern their relationship (Currie and Dorris, 1986). Zaghloul (2005) states, the work in construction industry starts with formalizing the boundaries which are typically stated in contracts and that govern the relationship among the parties that need or perform the required business and hence views contracts as a complex bundle of intersecting contractual relations.

An essential part of an engineering contract is the identification of all those who may be involved in it (Ribeiro, 1996) and to define the duties and responsibilities as well as the authority of each party (Usta, 2005). Further the contract documents establish the legal framework for the practical relationship between the contracting parties (Zaghloul, 2005). This legal frame work shapes the culture. Semple et al. (1994) explains this aspect of the contracts as a necessity due to two reasons; first, because a project is not a permanent relationship in which the prospect of future interaction would discipline behavior, second, personnel turnover during the project is common. Since the contract shapes the culture, it is the key framework for setting standards of behavior and trust shown by others, and ultimately the project's performance and success (Semple et al., 1994; Branconi and Loch, 2003; OGC, 2002).

A construction contract is made between two parties only 'the Employer' and 'the Contractor' (Tword and Rees, 2003) who, are a society with a complex set of interrelated relationships requiring cooperation and collaboration to coordinate time, resources, and communication (Harmon, 2003). While it is not only these two parties who takes part in a construction project. There is, potentially, a very large range of parties involved in construction projects (Semple et al., 1994) because construction projects demand considerably complex industry knowledge of financial organizations, governmental agencies, engineers, architects, lawyers, insurance and surety companies, contractors, and

building trades people (Krone, 1991). Association of Project Management (APM, 2000), define these people or organizations who have a vested interest in the environment, performance and/or outcome of the project as 'project stakeholders' (cited in Bryde and Robinson, 2005). Bryde and Robinson referring various researches (Chan et al., 2003; Winch, 1998; Boehm and Ross, 1989; Uher, 1999) expresses that, customer-focused contractor organizations that understand and fulfill the expectations of the client and client organizations that focus on understanding and accommodating the expectations of all project stakeholders are two requirements for an effective client–contractor relationship as such focus on other stakeholders will create win-win situations through trust, openness, teamwork and shared goals. Therefore the project must be viewed as a partnership by all the project participants (Turner, 2006). OGC (2002) reinforces this approach: "As well as the contractual and commercial aspects, the relationship between the parties is vital to making a success of the arrangement." Especially for long-term strategic contracts, where interdependency between customer and provider is inevitable, the emphasis on building a relationship will be much greater, as a result management structures for the contract need to be designed to facilitate a good relationship, and staff involved at all levels must show their commitment to it (OGC, 2002).

According to Kreitzberg (2000) as quoted in Usta (2005) legal aspect of the relationship is the first and highest of two aspects to the relationship between the employer and contractor, second of which is the day-to-day working relationship, so the contractual agreement between the two parties must be fair and clearly understood by both. Fisher (2004), explains this legal aspect as a legal relation or a connection formed by contract, that the parties have with respect to each other, and which is defined as those persons who are associated whether by law, their own agreement, or kinship as given by black (1979). Zaghloul (2005) however, based on the previous studies of Cullen et al. (2000) and Hart and Holmstorm (1987) argues that, no contract document, no matter how detailed can account for every possible issue, risk, contingency and

uncertainty that might arise through the project lifecycle, neither do contracting parties to any contract would ever be able to legally anticipate all the events that might occur over the lifetime of the contract administration, in the meantime it is not effective that contracting parties will write a new agreement every time a new circumstance arises while it is almost impossible to lay down each contracting party's responsibilities completely and unambiguously in advance. As a result most contracts are somewhat incomplete (Zaghloul, 2005). Since gaps in contracts are unavoidable, a mechanism that governs contractual adaptations to the evolving circumstances is needed in order to prevent from an excessively opportunist party who would like to maximize its own gains and take advantage of the other (Ilgar, 2005). Larson (1997 cited in Cheng and Li, 2002), claims that this opportunistic and self-seeking behavior of parties results in conflict of interests and consequently in the suspicion of motives and actions between clients and contractors. Cheng and Li point ineffective communication, litigation, and dispute as a result, of this suspicion of motives and actions. Ilgar (2005) suggests the mechanism to avoid such circumstances is the relationship of the parties as it affects their ability to achieve an agreement. Lewis (1995) as well notices this as he states: "success of contracting relationships depend as much on mutual faith as anything put on paper. It is hard to take risks with someone you do not trust. You cannot write agreements about enthusiasm" (cited in Zaghloul, 2005). Mostly trust, which is the social fabric of the business relationship, can feel the gaps in formal contractual aggreements and keep the contract administration process running smoothly (Zaghloul, 2005).

Trust is often seen as a defining characteristic of the relationship between the parties and means having confidence in the other party regarding its capability to do the job well, goodwill, integrity, and commitment to the relationship (OGC, 2002). Various studies highlight trust with its central role in the formation and maintenance of close trading relations (Burchell and Wilkinson, 1997; Rousseau and Tijoriwala, 1999), which reduces transaction costs in general (Barney and Hansen, 1994; Boss, 1987), facilitate mutually beneficial investments (Deutsch

1985; Dirks, 2000) and improve coordination between contracting parties (Elahee, 1999; Lazaric and Lorenz, 1998 cited in Zaghloul, 2005). According to Chan (2003), in an exchange relationship, parties involved to a contract must have mutual trust toward others that they are reliable in fulfilling their obligations (cited in Usta, 2005). By developing such a mutual trust and understanding, creating an open and constructive environment and contributing to the joint management of the contract delivery the relationship would work effectively (Elsey, 2007). Contracting parties on the other hand often stress the issue of cost and remain unaware that the absence of trust is a more powerful barrier to project success than either the contract documents or the cost of the project (Busch and Hantusch, 2000 quoted in Zaghloul, 2005).

2.1.1. Communications

Usta (2005), cites two aspects to the relationship between the employer and contractor from Kreitzberg (2000) as mentioned in previous chapter. The second, following the legal aspect, is the day-to-day working relationship of the parties. According to Kreitzberg it should be close enough so that the Employer is kept within all aspects of the project and is able to respond quickly to the Contractor's questions. Turner (2003) defines projects as temporary organizations, and remarks (2004) that the people working for that temporary organization must work well together: "…This is fairly obvious, but unfortunately, so often the project becomes a fearful battle between the project manager and project owner". As cited from Orlikowski (1994), communications are the basic means through which managers interact with the project counterparts and the achievement of a project's goals is highly dependent upon the capability of the construction management team to communicate effectively with the main parties partaking in the project (Shohet and Frydman, 2003). Communications as given by Davey et al. (2001) is one of the critical success factors for effective working relationships between client and contractor

organizations (Bryde and Robinson, 2005). Usta (2005) claims that, it is essential to 'open' the boundaries of the relationship, because it can relieve stress and enhance adaptability, information exchange, joint problem solving, and promise better outcomes. OGC (2002), introduces information sharing as the key to developing an open relationship where people feel able to share problems, plans, concerns and so on, and notes that such an open relationship is often cited as a benefit or an aspiration for partnership approaches. Zaghloul (2005) highlights the importance of information sharing by underlining the fact that "achieving contract objectives requires an arduous information exchange within the complex web of contracts among the contracting parties", thus information flows and communication levels should be established at the start of a contract, and maintained throughout its life (OGC, 2002).

The contract is the major medium of communication between the contracting parties interacting on a project (Zaghloul, 2005) and accurate and clear contract documents open the way for a more predictable and stable relationship among the contracting parties (Haddad, 2007). It is very important that both the contractor and the employer have the same understanding of these documents (Kreitzberg, 2000 cited in Usta, 2005). quite the opposite, Different groups of contracting parties, as well as different members of individual groups interpret contract clauses differently (Rahman and Kumaraswamy, 2004 cited in Usta, 2005). A frequent mistake made by contract administrators in contract interpretation is to look too closely at a specific clause to support their position, however isolation of specific clauses may work in a fashion to render a part of the clause or another clause inoperable therefore all provisions of the contract should be read in a manner that promotes harmony among the provisions (Smith, 2003). it is imperative for the parties to understand the contractual provisions because a court in case of a dispute enforces the contractual language since it presumes that the contract accurately reflects the bargain reached by the parties (Currie and Dorris, 1986) and is a complete and precise statement of exactly what terms the parties have agreed (Love, 2007). When a

provision may lead to more than one reasonable interpretation, the court must have a tiebreaker rule, of which one common example is to rule against the party that wrote the contract because they failed to clearly state their intent (Smith, 2003). Nevertheless, this is not necessarily of benefit to the other company because, to realize the benefit, it has to embark on costly litigation and the outcome is not guaranteed (Love, 2007).

2.1.2. Conflicts and Disputes

> "The construction industry is increasingly burdened with disputes. Today, construction projects are the subject of more disputes than in any other time in history although the construction business environment has moved toward partnering arrangements. The sluggish global economy has created an environment in which construction firms are forced to bid projects at or below minimum profit levels. At the same time, owners are demanding more complex projects without increasing the quality of contract documents. This has placed an added burden on the individual contractor to construct increasingly sophisticated projects with fewer capital resources and lower-quality documents. Under these circumstances, it is not surprising that the number of disputes within the construction industry continues to increase." (Statistical Report, 1992 cited in Kangari, 1995)

The main goal of the parties involved in a project's construction is to have a successful project which is constructed in accordance with the plans and specifications, within the time and cost originally anticipated (Harmon, 2003). Nonetheless, although both parties have long term interest in profit maximizing kind jointly, each also has an interest in gaining as much as they can on each occasion (Ilgar, 2005). Cheung et al. (2006) defines both parties, whose obligations and rights are typically stipulated in the conditions of the contract, as rational maximizers who will try to maximize their own interests as much as possible. however as Lester (2006) notes, wherever there are a wide variety of individuals with different aspirations, attitudes, views and opinions there is a

possibility that what may start out as a misunderstanding escalates into a conflict, projects thus as life in general, tend to have conflicts. Semple et al. (1994) also find it natural that a great deal of conflict exists within the construction industry due to its very complex, high-risk, multiparty business nature. Harmon (2003) referring several previous studies (Rhys Jones 1994; Conlin et al. 1996; Mix 1997; Arditi et al. 1998; Steen and MacPherson 2000) notes that the construction industry is plagued by an increasingly adversarial atmosphere existing between the owner and the contractor as a result of these conflicts. What a paradox that Ng et al. (2007) states due this adversarial society that the construction industry exists within conflict is unavoidable. In such an environment where there is always conflict obviously one of the important variables that impact the success of a project is how the organizations approach problems and conflicts (Diekmann et al., 1994 cited in Harmon, 2003). Without a doubt, conflicts between the diverse participants need to be minimized through better relationships and cooperative teamwork and under flexible contract conditions (Dissanayaka and Kumaraswamy, 1999 cited in Usta, 2005).

Peña-Mora et al. (2003) define conflict as any action or circumstance resulting from incompatible or opposing needs (quoted in Ng et al., 2007). A significant characteristic of conflict is that it usually presents two incompatible possibilities at the same time that result in difficulty for either party to make a choice (Fisher, 2004). According to Stephenson (1996) in the modern construction industry, where the contract is used to form business relations, conflict can be generated either by different interpretations of the contract terms or by the risk and liability to which the industry exposes the contract parties (cited in Fisher, 2004). Harmon (2003) and Lester (2006) in their studies, lists various reasons for conflicts as: Size and duration of the project, unclear project objectives, loose contractual arrangements, the complexity of the contract documents and inadequate design, sloppy or ambiguous documentation and non-confirmation in writing of statements or instructions, changed conditions, weak management, poor communication and understanding, personal attitudes, political

aspirations, cultural background or customs, arguments over methods and procedures, limited resources, financial issues, labor issues, and force majeure events. Ng et al., (2007), summarizes the sources of conflicts under two headings; organizational issues that are related to structure, process, or people and uncertainty that could be either internal or external. Ng et al. further in their work, obtains "patterns of conflict perception during the life cycle of projects" referring to the study of Thamhain and Wilemon (1975), which demonstrated that there is a change of relative conflict intensity over a project life based on their data from 100 project managers about seven conflict sources which are, schedules, priorities, workforce resources, technical options, administrative procedures, personality conflicts, and cost. Fig. 2 shows the trend of conflict intensity over project's life cycle as given by Ng et al.

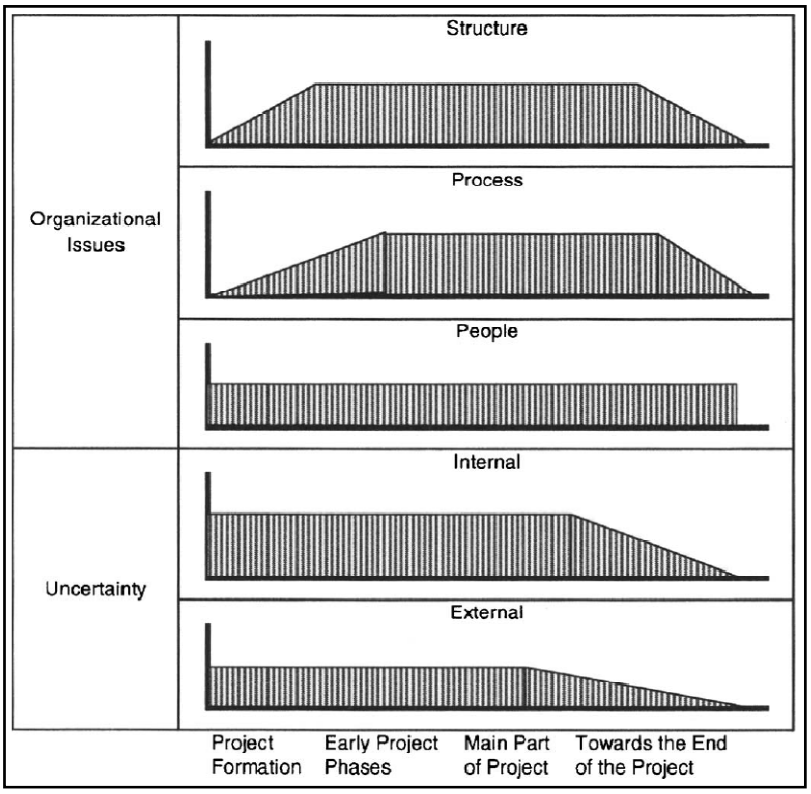


Figure 2 Trend of conflict intensity over project's life cycle (Thamhain and Wilemon, 1975 cited in Ng et al., 2007)

Ock and Han, at their paper "Lessons Learned From Rigid Conflict Resolution In An Organization: Construction Conflict Case Study" (2003) investigates the concept of conflict and lists three stages of psychological cycle of it: First the escalation where the conflict parties try to dominate the others physically or psychologically, the second stage that climax is reached and participants come to a stalemate where the situation is not likely to get worse and the third stage introduced by Rubin (1993) where the conflict deescalates. Figure 3 illustrates these three stages on the conflict curve that the authors adopted from Groton (1997). All conflicts, however should be noted that, do not follow the three stage cycle and some of them do not go beyond stalemate.

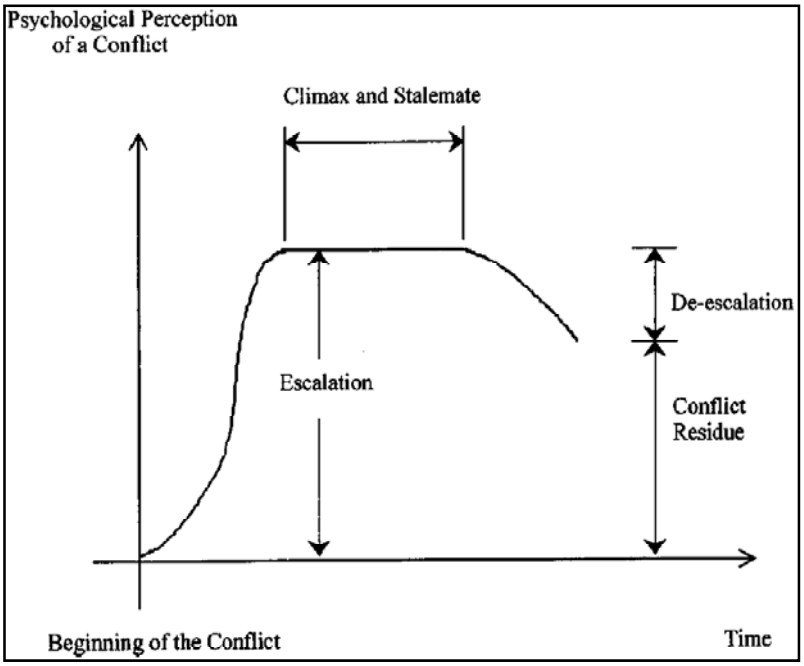


Figure 3 Conflict Curve (Groton, 1997 cited in Ock and Han, 2003)

Ock and Han further investigates these three stages and give four transformations that typically occur in the escalation stage: conflict issues tend to be increased, the issues include changes from criticism of a specific behavior to a focus on personalities, conflict parties come to use stronger tactics to win, and more people are engaged in the conflict. At the second stage on the other

hand conflict parties are in a transition from trying to defeat the other to the understanding that it may be possible and even desirable to get what they want through collaboration. This as stated by Ock and Han, does not indicate that they like each other, but they begin to take on each other as a potential allies rather than adversaries. In the de-escalation stage, there is a move toward a settlement of the conflict. Ock and Han referring Groton (1997) suggest five techniques whose interactions are very relevant with conflict results. These techniques that can be employed for resolving conflicts as given by the authors are: (1) forcing where one party exerts its viewpoint at the potential expense of another party, (2) confronting the problem, which regards a conflict as a problem to solve rather than a battle to win in order to achieve mutual satisfaction by taking care of both relationships and conflict interests, (3) compromising, which considering various issues, bargains, and searches for solutions that attempt to bring some degree of satisfaction to the conflict parties, (4) smoothing that deemphasizes differences and emphasizes commonalities over conflict issues, and (5) withdrawing which in other words is retreating from actual or potential disagreements and conflict situation. Another psychological aspect of a conflict as mentioned in Ock and Han is the conflict residue among the disputing parties, which Groton (1997) describes as ill-feelings in the disputants' minds that may not go away if a conflict is resolved without satisfactorily addressing mutual interests and relationships. This residue of conflict increases an atmosphere of stress and causes more desperate conflicts later on (Ock and Han, 2003).

Conflicts are present on all construction projects (Bramble and Cipollini 1995; Zack 1995; Fenn et al. 1997; Carsmen 2000; Pinnell 1999 cited in Harmon, 2003) and, if left unresolved as indicated by Harmon, can have detrimental effects on the progress of the project as well as the relationships between the contractual parties while the timely resolution will provide more satisfaction to both parties and will therefore not adversely affect job progress. Nevertheless, researchers such as Fenn et al. (1997) have argued that since conflicts will always exist, they should be managed during a project, similar to other variables

such as cost, schedule, and quality (cited in Ng et al., 2007). According to Lester (2006), it is one of the functions of a project manager to sense where such a conflict may occur and, once it has developed, to resolve it as early as possible to prevent a full blown confrontation which may end in a strike, mass resignations or a complete stoppage of operations. Ock and Han (2003) underlines that success in construction projects mainly depends on how well project managers handle conflicts. The goal in handling the conflicts as suggested by Ng et al. (2007) is to avoid and manage conflicts from escalating into disputes and lawsuits and as a result, project managers normally focus on how to avoid conflicts as much as possible, how to mitigate the impact of conflicts, and how to resolve conflicts when they happen.

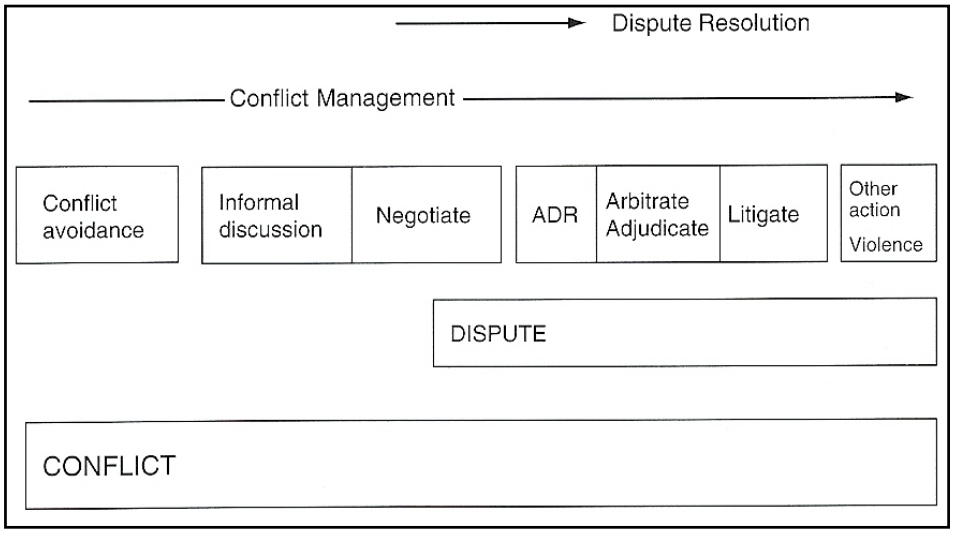


Figure 4 Conflict Continuum (Lowe and Leiringer, 2006)

While the successful completion of projects is thought to depend mainly on cooperation between the parties, problems and disputes always erupt due to conflicting opinions (Abdul-Malak et al., 2002), in other words when individuals do not work together toward a common goal, then conflicts, which are a part of every construction process, evolve into unresolved disputes, preventing the successful and timely completion of the project (Kreitzberg, 2000 cited in Usta,

2005). Figure 4 illustrates conflict continuum as introduced by Lowe and Leiringer (2006). Peña-Mora et al. (2003) defines dispute as a disagreement that requires a final determination, which is aided by the intervention of a third party (cited in Ng et al., 2007). Owner-contractor work is always fraught with potentials for disputes (Evans, 1993), even under best circumstances where every possibility eliminated they still likely to arise (Ashworth, 2006) and any disputes will eventually delay the project and increase the project cost, thus a dispute is a major obstacle for any project (Al-Juwairah, 1997). Al-juwairah (1997) blames contract documents for existence of disputes where somehow supporting this view, Iyer et al. (2007) charge contract language, which is considered difficult to comprehend, as the major source of disputes. Alternatively Mitropoulos and Howell (2001) lists project uncertainty, contractual problems, and opportunistic behavior as the basic factors that drive the development of disputes, while Kululanga et al. (2001) trace major disputes to four basic sources which are; the contract documents due to errors, defects, and omissions, failure to appreciate the real cost of a project in the beginning, changed conditions, and finally stakeholders involved in a project. Further Molenaar et al. (2000), classifies three main categories of characteristics that influence disputes: (1) People issues involve organizations, relationships, roles, responsibilities, and expectations that affect people, (2) process issues involve the manner in which the contract and project are carried out, and (3) as the last project issues include those characteristics that define the technical nature of the work. According to Molenaar et al. (2000), people do not cause disputes directly, but people do affect dispute performance more than any other variable.

Disputes are a reality in every construction project and without the means to address them, minor issues can fester and grow, with crippling consequences for project participants hence when resolution occurs sooner rather than later and when this resolution is relatively conciliatory, there is a much better chance that litigation can be avoided (Jannadia et al., 2000). Iyer et al., 2007 argue that delay in dispute settlement has manifold effects because, it hampers the project

progress if dispute arises during execution stage, it is detrimental to the relationship between owner and contractor, it contributes to the cost and time overruns and finally it sends bad signals to foreign investors thereby slowing down the national progress. Usta (2005) also points that failed attempts to resolve a dispute often strengthen the party's adversarial positions and are always counterproductive. Smith (2003) evaluates how this may happen: The contractor commonly performs a more formal analysis of the items under dispute and in order to move the negotiations forward, presents a formal claim document to the owner which in case it fails to yield results, the last resort is to file the claim for litigation. According to Smith, Even during this stage, negotiations often continue in an effort to avoid the time and cost of litigation, however during the maturation from a dispute to a claim, the parties in the dispute often become entrenched in positions and feelings and lose their ability to negotiate on the facts alone.

2.1.3. Resolutions

Most disputes are minor in nature, and can be settled amicably through negations however; sometimes more complex issues can turn into disputes which require other means of resolutions (The Aqua Group, 2003). According to Cheung (1999) resolving dispute is an inevitable part of a project manager's work in today's complex construction projects and includes a wide variety of activities ranging from the selection of a dispute resolution process to the participation in the actual negotiation. Where formal written contracts are in place, disputes between parties are traditionally solved under the limited options provided by their contract (Evans, 1993). Sertyesilisik (2007) evaluates these options as: "dispute resolution techniques are the procedures to settle the disputes between the parties in a fair, feasible and acceptable way in the shortest possible time." Figure 5 illustrates the stair-step chart that Cheung (1999) adopted from Groton (1992) and which depicts dispute resolution

methods currently commonly used in the construction industry. Cheung notes that most of these given methods are private except arbitration and litigation that are statutory controlled and the rising steps in the chart intimate the escalating levels in hostility and cost associated with.

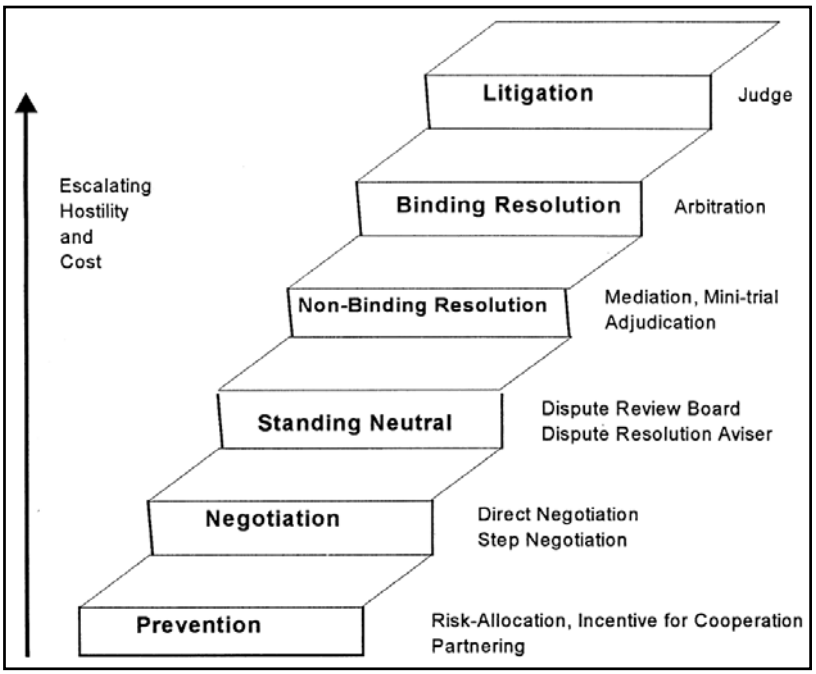


Figure 5 Construction Dispute Resolution Steps (Groton, 1992 cited in Cheung, 1999)

Cheung (1999) introduces prevention techniques, as "techniques, aiming at creating teamwork and harmony, thereby preventing dispute from arising" and also notes that equitable risk sharing and incentive for cooperation are usually initiated by clients, whereas the success of partnering relies on contributions from all parties involved in the construction process. Chan et al. (2003) defines partnering as management technique that tries to create an effective project management process between two or more organizations, which, as Chan et al. cited from Sanders and Moore (1992), aims to generate an organizational environment of trust, open communication, and employee involvement. Harmon (2003) referring various studies (Appel, 1993; DiDonato, 1993; Augustine,

1994; Zack, 1995; Groton, 1997; Keil, 1999) defines partnering as a project and risk management tool that seeks to change the attitudes concerning the relationships between the parties to promote mutual rather than bifurcated goals, and gives its primary objective as the prevention of disputes. Partnering lowers the risk of cost overruns and delays as a result of better time and cost control over the project (Cowan et al., 1992; Moore et al., 1992; Abudayyeh, 1994; CII, 1996; Thompson and Sanders, 1998; Gransberg et al., 1999; Black et al., 2000; Li et al., 2001; Chan et al., 2003). However, partnering cannot solve all the problems in the construction industry; it is only a management technique, and its success is totally dependent on the people who drive it (Slater, 1998 cited in Chan et al., 2003).

Murtoaro and Kujala (2007), quote two similar definitions for negotiation: it is the process of joint decision making (Young, 1991), in other words it is communication, direct or tacit, formal or informal, between individuals who are motivated to converge on an agreement for mutual benefit (Kremenyuk, 1993). Grutters (2007) on the other hand defines negation as: "negotiation is a process of discussion and give-and-take between two or more bargainers/disputants who seek to find a solution to a common problem. It has been described as a bartering and communication process and a psychological confrontation." Negotiation is a method which is effective, and cheap, besides it does not need external help (Ugur, 2007). As a result approximately 90 percent of disputes are resolved through negotiations, resulting in mutually agreed solutions (Evans, 1993), and negotiation stands alone as the fundamental of dispute resolution (Evans, 1993; Grutters, 2007).

It is common practice to negotiate small and uncomplicated disputes, but larger and more complex ones that parties cannot reach a resolution themselves frequently hinder the project through involvement with lengthy legal issues (Jannadia et al., 2000). Lectlaw (2004) defines a lawsuit as a legal action where a plaintiff files a complaint against a defendant within the public court system based on the damage to the plaintiff because of a failure of defendant to perform

a legal duty (cited in Ng et al., 2007). Many disputes follow the litigation route if a significant portion of the claim involves legal issues (Smith, 2003), or when publicity is desired and if there is important or complex questions of law (Nixon, 1997 cited in Sertyesilisik, 2007). Litigation as Redmond (2001) highlights is the last resort for settling the dispute and that after the courts, there is nowhere else for the parties to go (cited in Sertyesilisik, 2007). Moreover it is both expensive and time consuming for all parties. (Przybyla, 1998; Ronco and Ronco, 1996 cited in Fisher, 2004; Grutters, 2007). Thus this last level of escalation needs to be handled with care (Grutters, 2007).

The rising cost, delay and risk of litigation in construction disputes has prompted the construction industry to look for new and more efficient ways to resolve these disputes outside the courts (Jannadia et al., 2000). This, as argued by Nielsen (1994), resulted in marked preference towards alternative dispute resolutions (ADR), which normally take place outside the legal system, instead of Litigation (cited in Jannadia et al., 2000). Jannadia et al. cites from Robert (1978) that this is due to five principal reasons, which are: Speed, Cost, Expertise, Privacy and Practicality. Cheung (1999) investigates the critical attributes of ADR processes from the perspective of the users and lists five factors that represents twelve such attributes: (1) Settlement agreement which represents; bindingness of the decision, enforceability of the decision, and obtaining fairness, (2) benefit which covers; the cost involved and preservation of relationship, (3) nature of proceeding which is the confidentiality of the process, and privacy of the proceeding, (4) outcome of the process which stands for; the width of the remedy, and obtaining creative remedies, and finally (5) process of proceeding that represents; the parties' ability to control over the proceeding, flexibility of the proceeding, and the duration of the proceeding. Cheung's survey demonstrates that the ADR users are most concerned with the 'benefits' that can be obtained by adopting an ADR. Following 'benefits'; 'the process of the proceeding', 'nature of the proceeding', 'settlement agreement',

and ‘outcome of the process’ are ranked in decreasing order of importance by Cheung’s study.

ADR is used to represent all forms of the non-judicial dispute resolution used to settle any kind of disputes between any parties (Evans, 1993), and some commonly used ADR techniques currently in use in construction industry are briefly represented in the following paragraphs.

Arbitration is perhaps the most well known ADR technique and generally denotes submission of a dispute to a third-party resolution after a hearing in which each side presents evidence and argument of counsel (Grutters, 2007). By agreeing to submit disputes to arbitration, the parties agree to replace the public court system with a private system (Redmond, 2001 cited in Sertyesilisik, 2007). Most arbitration decisions are binding where the arbitrator, however, has no power to enforce the award (Smith, 2003); unless it is not confirmed by any court (Grutters, 2007).

Mediation is a non binding (Grutters, 2007) third-party-assisted negotiation (Smith, 2003; Harmon, 2003), where the neutral third party receives disputing arguments of parties in separate meetings, recognizes resistance points of them, determines whether there is an area of agreement and finally points their areas of agreement in a joint meeting (Smith, 2003). The mediator does not participate in settlements but acts to keep the negotiations progressing to settlement (Smith, 2003), hence helps the participants to reach a negotiated settlement of their differences (Grutters, 2007).

Mini-trials are a form of non-binding settlement proceeding where each side presents its case to a panel constitute of the parties' decision-makers and settlement authority that the parties may appoint and who is a neutral with expertise in the substantive law at issue (Grutters, 2007). A successful mini-trial procedure can resolve a dispute within three days (Hinze, 1993)

Dispute review boards are non-binding real-time, project-devoted dispute resolution systems (Smith, 2003), in which members experienced in the type of construction are authorized by the owner and the contractor (Grutters, 2007) to assembly a board shortly after the contract award in order to track the progress of the project and review any disputes as they arise (Hinze, 1993). Review boards have gained an excellent reputation for resolving complex disputes without litigation (Smith, 2003).

2.2. The Project Delivery

The fundamental aspect of contract management is, ensuring that the actual service provided is in accordance with the agreed standards and prices, in other words is the project delivery (Elsey, 2007). A successful project that has been constructed in accordance with the plans and specifications, within the time and cost originally anticipated is the main goal of the parties (Harmon, 2003) and the instrument that defines the scope of work, expectations and obligations of the contacting parties, is the contract (Haddad, 2007), which will conclude when parties have satisfactorily fulfilled their responsibilities (Elsey, 2007). "Generally the framework laid down by the construction contract defines and limits the rights, obligations, and responsibilities of the contracting parties in order to accomplish their objectives and reduce their risks. As discussed by collier (1979), this frame work specifies obligations that include duties and rights, as one party's right is another party's duty" (Zaghloul, 2005). Currie and Dorris (1986) note that the contract terms and rules of contract interpretation are crucial in defining the duties of each of the parties. Krone (1991) however points that contract documents are often too voluminous and complex to permit full understanding and control of the project, thus the first step in project administration according to Krone, is to understand the contractual responsibilities of the respective participants.

Fisk (2000) lists four principal construction delivery methods, which Haddad (2007) claims that, maximizing the advantages and minimizing the disadvantages of using a particular method depends on a clear understanding of each delivery method's characteristics. These principal delivery methods in brief and as cited by Haddad are, (1) traditional or design-bid-build contracts where the owner hires an architect/engineer to prepare design drawings, specifications, and contract documents, which are provided to general contractors participated to the tender, (2) design-build contracts where different from the traditional ones the owner signs a single contract with a design/build contractor to complete all planning, design and construction, (3) design/construction manager contracts where the architect/engineer is not only responsible for the planning and design phase of the project, but also responsible for management of the construction phase which, according to Fisk (2000), includes: "scheduling, cost control, quality control, long-lead purchasing, letting of single or multiple contracts and coordination of work", and finally (4) professional construction manager contract where the professional construction manager who is the owner's representative does not perform any design or construction work but is responsible for evaluating the work of the architect/engineer and the contractor. Some previous studies (HK 2003 cited in Erant and Gunduz, 2005; Sertyesilisik, 2007) consider build-operate-transfer type of contracting as well, as a separate project delivery method. According to Erant and Gunduz, build operate transfer structure was developed to involve private sector in the provisions of new infrastructure and is not an option in case there is no revenue source independent from government.

According to Mitropoulos and Howell (2001) the contract that governs the participation of different parties in a project, is the exchange of construction materials and services for money. This fundamental exchange also mentioned by Riberio (1996) in a different way. Riberio considers that the heart of the contract is composed of the obligations of the parties, together with the price. These two item together combines the commercial success of the project which

Grutters (2007) perceives as the ultimate goal of project management. Branconi and Loch (2003) introduces eight key levers that constitute the economic frame of the project's business deal, and notes that in order achieve a success, for any parties, it is essential to understand these business drivers which specify the basic content of the deal, and give assurances for both sides. Branconi and Loch further claims that these eight drivers which are, technical specifications, price, schedule, payment terms, warranties, performance guarantees, limitations of liability, and securities cover 80% of the most critical aspects of the project, and anything severely wrong on any of these items, would severely impact the project success, thus these levers, above all, must be well defined in the contract and managers with business responsibility must think through them. Figure 6 illustrates the eight key business levers in the contract as adopted from Branconi and Loch, and following paragraphs summarizes these levers from authors work.

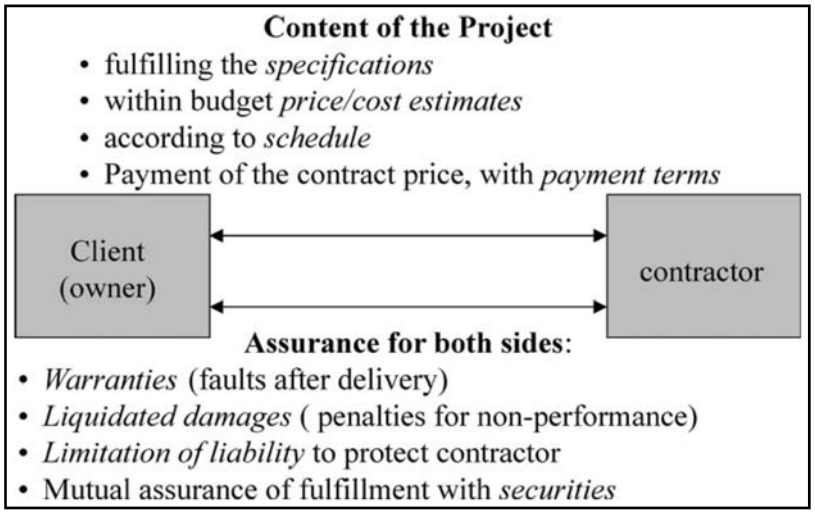


Figure 6 The eight key business levers in the contract (Branconi and Loch, 2003)

The technical basis of project, including future operation and maintenance is defined by the client. Adequacy and completeness, consistency between the

technical and commercial part of annexes, and the clarity of scope, deadlines and the client's deliverables are included to the quality of the specifications. Future change orders or claims are heavily determined by the concreteness of the specifications documentation, as it defines: what is a changed requirement.

Ideally, the price and the quality of the underlying cost estimates should be perfectly consistent with the technical specifications, including an adequate cost contingency. It is dangerous to deviate from the true cost in any direction, the lowest bid may reflect that the contractor has not sufficiently understood the requirements, or the contractor is applying less well-suited technology or equipment, or wants to lock-in the contract and then make money by filing change orders thus the client must verify major assumptions of the contractor. Because contractor usually finds ways to claim changes or to sacrifice quality it always fails to nail the contractor to the contract.

For a smooth project implementation, consistency in the key milestones and a shared understanding of them are vital. Compressing project schedules in order to improve the clients' project returns causes any execution delay to pose a trade-off for the contractor where he spend money either on acceleration or on liquidated damages. Parties should be explicitly aware of these trade-offs and incentive effects, as the contractor may completely stop exerting effort after a significant delay, and both sides may lose in the end.

The common advance payment of 5–15% allows contractors to start the job and the intermediate payments allow the contractors, who rarely have the cash flows to pre-finance their suppliers, to deliver equipment. The final 5–10% payments those often tied to completions and performance tests are of critical as they enable the client to keep maximum pressure on the contractor. Sometimes the client, in order to keep the money, comes up with formal arguments or minor punch lists even the facility already operates successfully. It might be the existence; at stake for contractors therefore they should seek contractual terms to protect themselves.

It is contractor's duty to make sure that the facility operates correctly at least over the limited warranty period in which the contracted performance of equipment and services are secured. Warranties may be tricky and the clients can sometimes justify that there are operation errors even though there are not thus may start warranty claims. Clients also prefer complete warranty coverage, where contractors should be aware of two dangerous complications. First, the warranty should specify whether it includes only re-performance of services or also the replacement of the equipment, it is important that once the warranty period is re-started by a claim, chain warranties may arise where the warranty may spread from one part to a whole plant in case further parts fail during the re-started period. Second, if the warranty arises due to a failure of a supplier of the contractor it can be difficult for contractor to claim all the costs incurred back from the supplier.

To prevent from liquidated damages the contractor should verify that the defined parameters are satisfied and the performance is fulfilled by the delivered facility. The performance aspects or conditions for achieving the performance must be explicitly defined in order to avoid from problems.

Warranties and liquidated damages protect the client. On the other hand the contractor is protected by a contractual limitation of liability that specifies a maximum level of exposure and mostly in practice, ranges from 5 to 10% of the contract value. However it should be noted that a full value exposure even under 5%, may endanger the contractor's existence.

Clients often require financial securities from the contractor those can be up to 25% of the contract value, and contractors, in turn, often insist on payment securities from the client firstly because additional financial exposure due to payments and commitments to his suppliers may arise, and secondly, because legal enforcement possibilities are limited in some countries. The contractor's means to execute a security and drawing money from a client, however, when compared to the enforcing possibilities of a client, are limited in practice.

2.2.1. Risks

Whenever an organization deals with another party, it is exposed to risk (Krappè and Kallayil, 2003), which endangers the fulfillment of the contract in between, therefore an important aspect of managing service delivery is the management of risk, which incorporates all the activities required to identify and control risks that may have an impact on fulfillment of the contract (OGC, 2002). Akcamete (2006) argues that the construction industry, especially in foreign markets, contains more risk and uncertainty than many other industries. The reason for this can be found in Usta (2005), who states that the construction process is complex and characterized by many uncertainties from beginning to end. Zaghloul (2005) relates uncertainty to the occurrence of an event about which little is known, and since every detail of a project cannot be planned before the work begins, uncertainties are common to any task (Laufer, 1991 cited in Mitropoulos and Howell, 2001). According to Jaafari (2001), there are three principal sources of uncertainties in projects; external factors, shifting business objectives, and poorly defined methods for project realization which is due to project complexity and absence of repetition as well as poor knowledge and experience of the project team. And according to Shohet and Frydman (2003) uncertainty increases with the size of the project, and with the number of participants

As given by Winch (2002) and McKim (1990), risk is associated with uncertainty (cited in Haddad, 2007), where unlike the uncertainty about which there is no knowledge, there is some knowledge about a risk (Zaghloul, 2005). Similarity across cases, similarity over time, and sufficiently large numbers of past observations are listed by Zaghloul, as three conditions to reduce uncertainty to risk, where first two are relevant to the validity of probability estimates, and the third to their reliability. Risk is defined as the probability of an unwanted outcome happening (Elsey, 2007), or as the exposure to loss/gain,

or the probability of occurrence of loss/gain multiplied by its respective magnitude (Jaafari, 2001). Price and Baloi (2003) define, risk in construction projects, as the likelihood of occurrence of a detrimental event (cited in Usta, 2005) where as Bufaied (1977) and Boothroyd and Emmett (1998) describe construction risk as a consideration in the process of a construction project whose variation results in differing the final cost, duration and quality of the project (cited in Zaghloul, 2005).

Adams (2008) classifies construction project risks as objective risks which can be analyzed by the actual observation or calculation and subjective risks which are assessed based on beliefs about the risks, rather than objective recorded risk data. Objective risks as given by Adams involve experimental evidence, long-term experience, and complicated analytical calculations and are quantitative in nature also often structured in probabilities. Analyzes of subjective risks on the contrary are often qualitative and based on the analyst's knowledge and experience and the process by which the analyst selects and organizes such knowledge and experiences into meaningful patterns. According to Adams the majority of construction contract risks are subjective, because there are often insufficient historical data to enable their objective analysis, thus their analysis based on the subjective predictions of the analyst.

Erikson, (1979) on the other hand classifies construction process risks in to two, as contractual risks that arise from the interaction of different parties and construction risks that arise from factors such as differing site conditions, acts of god, resource availability, etc. Contractual risks, which expose cost to both parties, according to Erikson are introduced through lack of contract clarity, absence of perfect communication between the parties involved, and problems of timeliness in contract administration, and are not risks to be shared; however the owner can reduce them by improving contract clarity and contract administration. Construction risks as defined by Erikson are inherent to the work itself and would be present even if one company with perfect international communication performed all of the construction process functions itself. He

also states that these risks may be reduced, and are primarily managed by assigning them to one or more parties involved, considering factors such as; the differing utility functions of the parties, maintaining contractor incentives, and determining which party can best control the risk or influence the severity of the loss.

Erikson (1979) further in his study, informs that both contractual and construction risks may result in changes to the original project plans and its original cost estimates, moreover their impacts may be iterative and may cause further project impacts. Therefore risks can be transferred, shared, accepted, managed, or minimized but cannot be ignored (Latham, 1994 cited in Usta, 2005). It is advisable to seek to mitigate and remove risk whenever possible before contract award (Elsey, 2007), however not all the risks are foreseeable and quantification of foreseeable risks may be neither always possible nor correct (Zaghloul and Hartman, 2003).

One of the factors that the amount and nature of construction risks depend on, is, the risk allocation (Charoenngam and Yeh, 1998). Risks should be allocated to the party best able to control them (Tao, 1994 cited in Charoenngam and Yeh, 1998; Al-Barghouthi, 1994), and if they are beyond both parties control they should be assigned to the owner (Charoenngam and Yeh, 1998). However project participants do not have a shared understanding of the risks because each party perceives risks from their perspective, which do not cover all risks (Usta, 2005). Therefore each party as they feel the existence of problems tries to use contractual language or clauses to set the burden on another party (Al-Barghouthi, 1994). Considering that, the decisions regarding risk sharing or risk shifting are made within the context of an owner's contracting policy (Kozek et al, 1998 cited in Zaghloul and Hartman, 2003), it is not surprising that common aim of owners is to avoid risk as far as possible, by allocating as many risks to the contractor (Piper, 2001 cited in Usta, 2005; Zaghloul and Hartman, 2003; Al-Barghouthi, 1994; Zaghloul, 2005).

One way in which the contracting parties attempt to address the rights and responsibilities for risk is through dealing directly with the issue of legal liability by including provisions which exclude liability arising from certain causes (Zaghloul and Hartman, 2003). Liability is defined as the condition of being responsible for a possible or actual loss, penalty, evil, expense or burden and should be assigned to the party that best controls it as well as the risks (Al-Barghouthi, 1994). Disclaimer (exculpatory) clauses intend to exclude an owner's liability in contract and often in tort for cost incurred by a contractor (Goldsmith, 1995 cited in Zaghloul and Hartman, 2003). On the other hand, when a risk is shifted to the contractor by means of an exculpatory clause the contractor must either insure against it or add a contingency to the bid price if the contractor has no control on occurrence or outcome of the risk (Jergeas et al, 1994 cited in Zaghloul, 2005). This practice increases bid prices, because the contractors pass this cost back to the owner in the bid price as contingencies (Hartman 2000 cited in Zaghloul, 2005; Charoenngam and Yeh, 1998; Erikson, 1979). Therefore Zaghloul and Hartman (2003) referring various studies, identifies disclaimer clauses as a main reason which increases the overall cost of a project (CII, 1986; CII, 1988; Khan, 1998; Jergeas and Hartman, 1994; Zack, 1996; Hartman, 1993). Figure 7, reflects Zaghloul's (2005) illustration for outcomes of risk allocation through disclaimer clauses, which as he believes, is actually: owner's payment for protection that he will not necessarily receive.

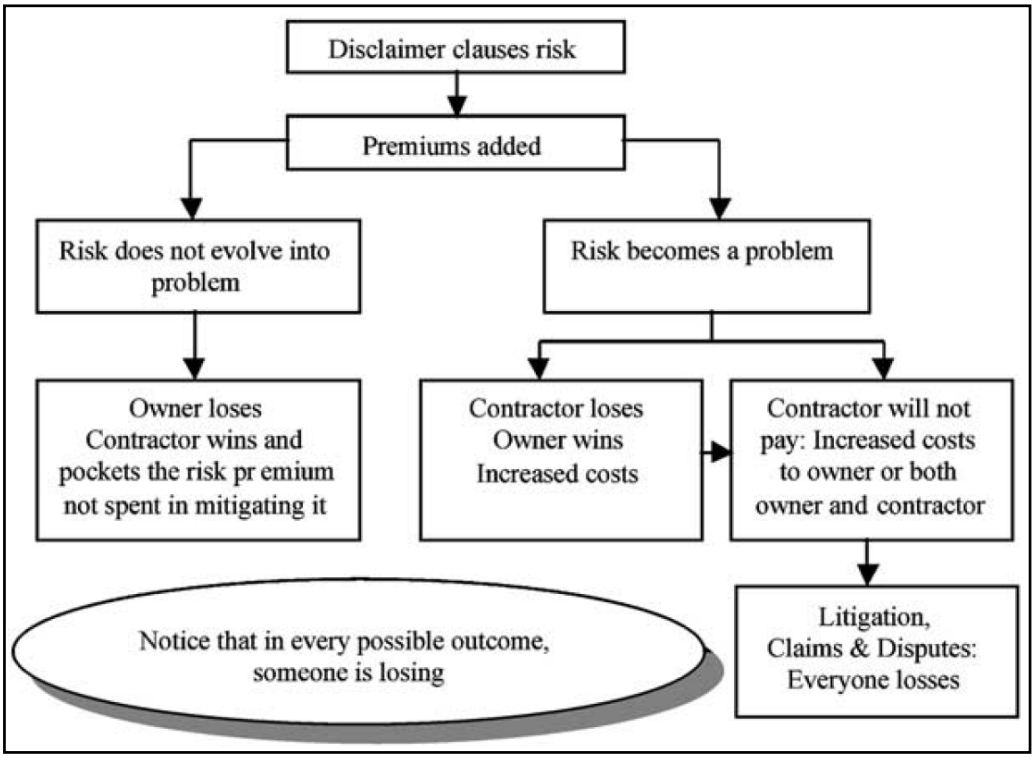


Figure 7 General outcomes of risk allocation through disclaimer clauses (Zaghloul, 2005)

Given the opportunity, an owner should favor efficient allocation of risk between parties, this can significantly influence the behavior of the project participants and hence impact both project performance and final cost (Zaghloul and Hartman, 2003). According to Haddad (2007) the process of identifying, quantifying and proper allocation of these risks has a positive impact on reducing the number of potential disputes, claims, litigations and the cost because it creates a better understanding of each party's responsibilities and obligations within the framework of the contract (Haddad, 2007). Although the owner may decide the allocation policy for a project, it is the responsibility of both contracting parties to provide adequate risk management (Zaghloul, 2005; OGC, 2002). Risk management involves modeling the project's objective functions against project variables, which includes variables as cost and quantities of input resources, external factors, etc. (Jaafari, 2001). According to

Wang and Chou (2003), to make risk management more efficient and effective, all parties must understand risk responsibilities, risk event conditions, risk preference, and risk management capabilities (cited in Usta, 2005). The generally recognized steps entailed in risk management are (Perry and Hayes 1985; Barrett and Hine 2001) risk identification, risk analysis and evaluation, and risk response and control (cited in Zaghloul, 2005). Adams (2008) denotes these steps as; (1) risk identification is 'the process of systematically and continuously identifying, categorizing, and assessing the initial significance of risks associated with a construction project', (2) risk analysis and evaluation is 'the process which incorporates uncertainties in a quantitative manner, using probability theory, to evaluate the potential impact of risk', (3) and finally risk response management is 'strategies aimed at removing as much as possible the potential impact of risk or increasing control of risk'.

The incidence of risk depends upon what the contract between the two parties actually provides, one of the important functions in preparing for engineering contracts is the assessment of the risks, and the use of various legal and commercial techniques of managing the risks that may arise before, during, or after delivery (Ribeiro, 1996). Zaghloul (2005) points that, contracts have evolved into complex documents that define and address risks and most of the possible uncertainties. Zaghloul also highlights the fact that, for contract documents to be effective there must be certain elements and considerations; like an adequate reflection of the project objectives, the motivational, and an appropriate reflection of the risks as well as the ability of the parties to bear those risks. According to Zaghloul because it governs three vital success factors which are; the method of payment for the contractor, the risk allocation between the parties, and its ability to motivate the contractor, the choice of contract type is one of the most important decisions in any contract strategy (Perry 1988 cited in Zaghloul, 2005). Contract as an economic exchange, can be identified as either fixed price which allocate more risk to the contractor or cost reimbursable which require greater risk sharing between the parties (Smith,

2003). These two main contract types as briefly cited by Smith can be introduced as follows: Unit price contracts that establish costs relative to measurable work unit and the lump sum contracts where the contractor assumes all risks for the stated price are fixed price contracts that establish a fixed sum of money for the execution of a defined quantity of work. Reimbursable contracts on the other hand allow for contract adjustments relative to overall project scope and do not, generally, address a final fixed price, thus flexible for changing design or scope of work and establish the basis for a less adversarial relationship between the owner and contractor (Contracts Task Force, 1986).

2.2.2. Changes

Anderson and Gunnarsson (2002) states: "The construction industry is suffering from low margins and contractors have difficulties making projects fully profitable. One of the reasons is that contractors are not always properly compensated for all the variations and additional work that occur during a project." In construction projects today the contractor's project management has to deal with a large amount of variations and additional work (Anderson and Gunnarsson, 2002), and the specification and management of change control is an important area of contract administration (Ribeiro, 1996). The contractor's supervisor makes an average of approximately 110 decisions a day that affect the final cost and time of the construction project where many decisions involve the construction change process (Krone, 1991), and are often based on incomplete information, assumptions and personal experience of the construction professionals (Hao et al., 2008). Any additions, deletions, or other revision to project goals and scope are considered to be changes, whether they increase or decrease the project cost or schedule (Ibbs et al., 2001), or quality (Senaratne et al., 2005) and generally no contract has ever been completed without any change to the original contract (Al-Juwairah, 1997; Elsey, 2007;

Hao et al., 2008) especially in the case of large, complex construction and service contracts (Elsey, 2007). Changes or field variations are created from many different circumstances most of which are successfully negotiated in the field, and once a determination is made on the cost and time impact, the contracting parties modify the original agreement to accommodate the change (Smith, 2003). Even where they occur without warning, it is often possible to foresee what might happen and plan for what can be done (OGC, 2002). Unplanned changes with potentially adverse implications for project cost, time and quality however are also inevitable (Senaratne et al., 2005). Such changes of any significance will affect the scope and potentially the viability of the contract for either party therefore it is important to understand the implication of change for both parties (Elsey, 2007). According to Elsey, if a change results in a reduction in the value or scope, claims for increases in charges may arise, or if the change results in a substantial increase in the value or scope, it is important that the organization continues to ensure that value for money is secured.

The contractual nature of construction changes is a very distinguished feature of the construction industry (Hao et al., 2008) and unlike many other contracts, construction contracts usually anticipate that there will be changes (Smith, 2003; Ribeiro, 1996; Currie and Dorris, 1986). Though some changes may bring in benefits in the long run, most changes, if not managed properly, will result in negative impacts, (Hao et al., 2008) and generally the construction industry among other industries has a very poor reputation for coping with these adverse effects of change (Zaghloul, 2005). Due to the changes, many projects fail to meet deadlines and cost and quality targets (Hao et al., 2008; Zaghloul, 2005; Senaratne et al., 2005) and therefore substantial adjustment are required to these items (Tiong 1990; Ibbs 1997; Ibbs et al. 1998 cited in Ibbs et al., 2001; Hao et al., 2008), which sometimes may cause serious ethical problems and disputes in the industry (Hao et al., 2008). Besides these major effects, indirect effects of change are also considerable (Senaratne et al., 2005). Senaratne et al., gives two of these indirect effects from Bower (2000) as loss of productivity and

interruption to workflows and cash flows. Senaratne et al. remarks that both direct and indirect consequences demand effective ways of managing them, for the minimization of the disruptive effects of change, and moreover an effective change management would allow change to take place in a controlled way so that viable alternatives are identified, developed and the impact is defined before implementation. Therefore the contractor has to be aware of how to handle all these changes in an effective way (Anderson and Gunnarsson, 2002; Ibbs et al., 2001) and also needs to be aware of all obligations and opportunities the contract states (Anderson and Gunnarsson, 2002).

The error made time and again is that change management is not formulated adequately in the contract because people are of the opinion that if there are changes they will be able to handle them (Grutters, 2007). Change is easier to deal with when preparations are made (OGC, 2002; Krone, 1991). Not every possibility can be foreseen and planned for, but it is desirable that the contract include some flexibility for changing circumstances as well as procedures for handling changes (OGC, 2002; Elsey, 2007; Grutters, 2007; Krone, 1991). Krone (1991) argues that change clauses could possibly direct management to uncover the change early by; specifying a clear notification and negotiation process, including an early design review system based on problem solving and value engineering, and as he cites from Collier (1982) allowing contractor to reflect his cost estimates to his bid.

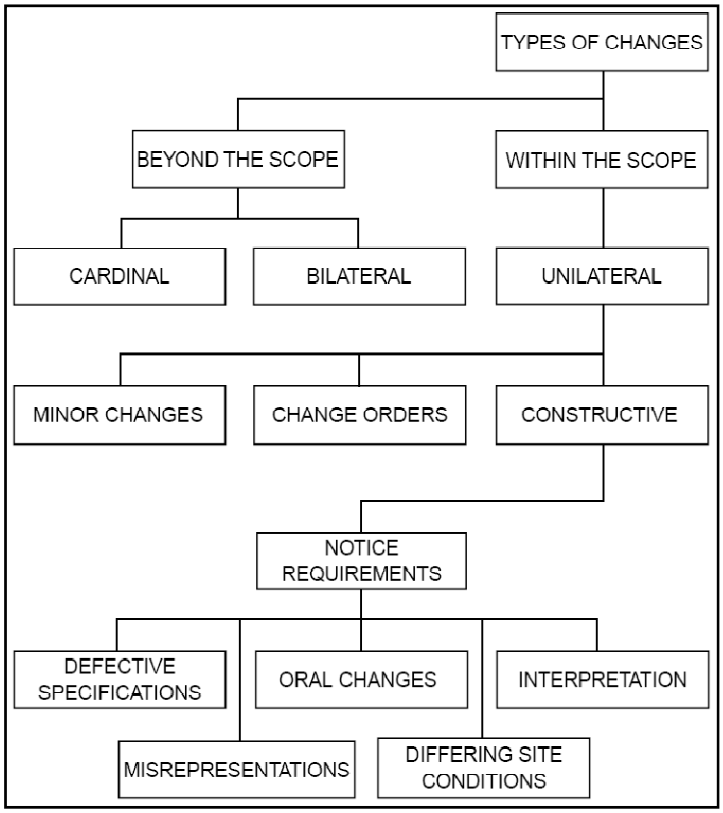


Figure 8 Types of Changes (smith, 2003)

Figure 8 represents Smith's (2003) distinction of changes where he lists 3 types of changes which are; unilateral changes those are within the scope of the contract, and cardinal or bilateral changes (contract modifications) those are beyond the scope of the contract. According to Smith cardinal changes describe either a single change or an accumulation of changes and a bilateral change is generated by the need for a change outside the contract scope and, therefore, beyond the owner's capability to issue a unilateral change. Smith further distinct unilateral changes as; minor changes that do not involve increased cost or time, change orders that conducted in accordance with the change order clause of the contract where the contractor is obligated to perform unless the change can be categorized as a cardinal change, and finally constructive changes where notice requirement is necessary but do not considered in the changes clause of the contract. The change order clause is an article of the contract's

general conditions that allows modifications to be made to the contract, and the change order once it is submitted and approved modifies the scope of work as a new part of the contract (Krone, 1991; Hao et al., 2008; Evans, 1993; Al-Gunaiyan, 2002). Such a contract modification has to be negotiated case by case and requires a common (documented) agreement among all the parties involved (Hao et al., 2008).

Changes are very common and likely to occur from different sources, by various causes (Hao et al., 2008; OGC, 2002), both internal and external (OGC, 2002). Most commonly, lack of timely and effective communication, lack of integration, uncertainty, a changing environment, and increasing project complexity are the drivers of project change (Naoum 1994 cited in Ibbs et al., 2001). Gunduz (2002) gives aggressive scheduling, which is due to tight budgets and the clients' desires to commence operations quickly, as an increasing factor which leads to increase in the number and magnitude of project changes. However most frequent and most costly changes are often related to design (Lu and Issa, 2005 cited in Hao et al., 2008) because the contract documents are often an imperfect representation of what the owner intended at the beginning (Mason, 1973). According to Al-Juwairah (1997) design changes, which results in delay as well as cost, has several reasons including client requirements, design errors constructing difficulties, government requirements or building codes. Another design related driver of changes is given as parallel design by Anderson and Gunnarsson (2002). As given by Anderson and Gunnarsson the trend toward shorter construction time resulted in early start-ups where the design is often not completed and has to be done in parallel with the production, and therefore contractual documents such as drawings and specifications are revised several times and changes in design have become a fact.

Delays can cause a number of changes in a project such as late completion, lost productivity, acceleration, increased costs, and contract termination (Arditi and Pattanakitchamroon, 2006). In construction, delay could be defined as the time overrun either beyond completion date specified in a contract, or beyond the

date that the parties agreed upon for delivery of a project (Assaf and Al-Hejji, 2006). Delays happen in most construction projects, whether simple or complex (Sweis et al., 2008), and as Kumaraswamy and Yogeswaran (2003) cites: "Delays are a major source of claims and disputes in construction projects (Barrie and Poulson, 1992) and have even been cited as the most common and costly cause of problems (Alkass et al., 1995; Conlin and Retik, 1997)." According to Kumaraswamy and Yogeswaran delays may arise from a wide variety of causes, however, hotly contested contractual claims are triggered by disagreements on the responsibilities and liabilities for such delays, which are complex in nature. Arditi and Pattanakitchamroon (2006), illustrates this complexity as: "A delay in an activity may not result in the same amount of project delay. A delay caused by a party may or may not affect the project completion date and may or may not cause damage to another party. A delay can be caused by more than one party; however, it can also be caused by none of the parties (such as unusually severe weather conditions). A delay may occur concurrently with other delays and all of them may impact the project completion date. A delay may sometimes contribute to the formation of other delays." On the other hand, in an environment where delays are inevitable, projects are still increasingly tended to become more time-constrained (Clarke, 1994 cited in Williams, 2003). Consequently the emphasis on tight contracts, to pass time-risk onto the contractor, increased (Williams, 2003; Currie and Dorris, 1986). Therefore it is becoming more important for a contractor, to claim for a suitable 'extension of time' to his contractual finish-date when delays caused by the client; otherwise he will find himself subject to liquidated damages for reasons within the client's control (Williams, 2003). Many construction contracts contain time extension clauses that provide for extensions to the scheduled completion date upon the occurrence of certain conditions or circumstances as specified by the clause (Currie and Dorris, 1986).

2.3. The Administration of the Contract

Contract administration, the formal governance of the contract, is concerned with the mechanics of the relationship between the parties, the implementation of procedures defining the interface between them, and the smooth operation of routine administrative and clerical functions; and contract administration includes such tasks as contract maintenance and change control, charges and cost monitoring, ordering and payment procedures, management reporting, and so on (OGC, 2002). According to OGC the importance of contract administration to the success of the contract, and to the relationship should not be underestimated because clear administrative procedures ensure that all parties to the contract understand who does what, when, and how. Further OGC points that the foundations for contract management are laid in the stages before contract award where it can be ensured that the terms of the contract include an agreed level of service, pricing mechanisms, provider incentives, contract timetable, means to measure performance, communication routes, escalation procedures, change control procedures, agreed exit strategy and agreed break options, and all the other formal mechanisms that enable a contract to function. As stated by OGC these formal contract aspects form the framework around which a good relationship can grow and if the contract was poorly constructed, it will be much more difficult to make the relationship a success.

According to Collier (1987), a contract creates an exclusive relationship that lasts until the contract is performed, made void, or terminated (cited in Sertyesilisik, 2007). Legally, a contract may be defined as an agreement by two or more competent parties to do or not to do some lawful act(s) (Colby, 1976 cited in Al-Barghouthi, 1994). In the simplest terms, a contract is a promise or agreement that, the law enforces (Semple et al., 1994), recognizes as a duty, and provides a remedy (Currie and Dorris, 1986). The contract according to Zaghloul (2005) is a codification of the private law which governs the relationship and the business environment, and that defines the responsibilities, conditions of its operations, the right of the parties, and grants the remedies.

Unless the contract provides to the contrary, whatever agreed is fixed and unalterable (Ribeiro, 1996), therefore contracts enable one party to enter into agreements with others, without relying only on the good faith of them (Bowers et al., 2004 cited in Sertyesilisik, 2007). Various researchers argues the basic principles of contracts that the absence of which legally void the contract (Kavanagh et al. 1978 and Sweet 1993 cited in Haddad, 2007; Cooper, 1999 and Dixon and Crowell, 1993 cited in Zaghloul, 2005; Sertyesilisik, 2007; Snow, 2002; Ribeiro, 1996; Smith, 2003; Currie and Dorris, 1986; Al-Barghouthi, 1994; Hinze, 1993; Lowe and Leiringer, 2006; Ashworth, 2006). Even there are some minor differences on their perspectives all these studies emerge to four main principles necessary to bind the parties and an enforceable and valid contract has to have all. These four main principles of contracts are; agreement or offer and acceptance, consideration, mutual intention to create a legal relationship, and lawful purpose and legal capacity for the contracting parties.

A contract is an agreement between at least two parties to a matter where the important aspect is that the agreement is to the same thing (Snow, 2002). Under traditional contract law, the parties must agree as to every important aspect of their undertaking (Currie and Dorris, 1986) and there is no contract until the parties have reached agreement and until the terms and conditions of contract have been finalized and agreed upon (Ribeiro, 1996). The mutual agreement consists of an offer done by a party to another and an acceptance of this offer by the other party (Collier, 1987 cited in Sertyesilisik, 2007). In order to have a binding contract both offer and an acceptance must exist (Colby 1976 cited in Al-Barghouthi, 1994; Haddad, 2007). The offer has to clearly state its scope of work, price and terms of agreement and after both parties agree on the offer, they have to accept all terms of the agreement (Haddad, 2007). Offer and acceptance indicates that there has been a meeting of the minds or mutual assent (Smith, 2003).

Contracts are generally economic exchanges where, something of value must be exchanged (Smith, 2003). A promise given for nothing is not binding; therefore

parties to the agreement should provide something of value in order for the agreement to be binding (Kool, 1998 cited in Zaghloul, 2005). Consideration is defined as a legal value, bargained for and given in exchange for an act or a promise (Bowers, *et al*., 2004 cited in Sertyesilisik, 2007), and for an agreement to be valid there must be a valid consideration on both sides (Currie and Dorris, 1986) in other words the contract should specify the exact payment the owner will pay the contractor for its services (Haddad, 2007).

Another major element that is necessary for the formation of a legally enforceable contract is an intention to create legal relationship (Zaghloul, 2005). As Zaghloul cites from Collier (1979), the contracting parties must intend to create a legal relationship and a clear outward manifestation of this intention must be present. Zaghloul also cites from Marsh (2000) that the intention may depend upon the clarity and uncertainty of the terms of the contract. According to Smith (2003) the terms of the contract should be clear enough that an independent third party can determine whether the two parties performed as promised.

The last major element required to create an enforceable contracting relationship is that each contracting party should have legal capacity, i.e. must be recognized by the law as capable of contracting and each has to be legally capable of fulfilling commitments in the proposed agreement (Zaghloul, 2005). In other words parties must be legally competent to contract (Currie and Dorris, 1986). Furthermore, a contract to undertake illegal activity is not enforceable in courts of law thus contractual agreement cannot be illegal and must be of a legal purpose (goldsmith, 1995 cited in Zaghloul, 2005; Smith, 2003; Currie and Dorris, 1986). For example, a gambling debt is unenforceable although if might reflect every other element of a legally valid contract (Currie and Dorris, 1986).

It can be noted that formality, in the sense of a written document and a signature, is not normally one of the requirements of a binding contract (Ribeiro, 1996). Unless there is a statutory requirement that prohibits their use,

oral contracts are valid agreements (Smith, 2003), which are binding thus enforceable (Zaghloul, 2005). As given by Zaghloul researchers such as Hargrove (1998) emphasizes the value of informal contractual agreements for the underlying trust factor that exist in the relationship where Doz and Hamel (1998) value the legal written contractual relationships between the contracting parties acknowledging that trust figures in a contracting agreement are affected by factors besides the documents themselves. Zaghloul referring works of Jeffries and reed (2000) and Gulati (1995), further states that trust results in closer business relationships with less need for detailed contracts and contracting parties who already trust each other find it easier to handle risks and uncertainties informally, therefore to a certain degree, organizations appear to substitude a certain level of trust for contractual documents in their repeated contractual business relationships (Zaghloul, 2005). According to Ribeiro (1996): "The disadvantages of making engineering contracts by less formal methods are not legal but administrative, and usually relate to problems of identification of the terms of the agreement, or of proof that a contract actually existed in the first place. It is for these reasons and not because of any legal requirement, that engineering contracts are usually brought into being by means of carefully prepared and signed documents." Oral agreements can still be binding, but generally, contracting parties do not rely only on them to perform a professional service or to create a contractual relationship (Zaghloul, 2005).

The contract document is the ground rules between all parties (Al-Juwairah, 1997). Almost all the liabilities of each party are, or at least should be, stipulated in the contract document (Al-Barghouthi, 1994). The contract entails the terms and conditions that the parties agreed upon and is the instrument that defines the scope of work, expectations and obligations of the contacting parties (Haddad, 2007). The complex nature of major projects together with their risks require detailed and carefully written contracts that define (as precisely as possible) the legal, financial and technical aspects of the results and behavior

desired by the contracting parties (Branconi and Loch, 2003). Ribeiro (1996) points that this is not simply a matter of legal content and documentation in the relevant contract, nor is it simply a matter of commercial and technical expertise but is a combination of all of these things: “a legal and commercial kaleidoscope in which a number of ideas intersect and interrelate.” Ribeiro also claims that engineering contracts have little in common with gambling, and if one strategic end can be described as paramount, it must be that, as far as possible, the outcome of such a contract must be predictable (Ribeiro, 1996). Therefore, because the effects and consequences of contracts are serious, the well prepared contracts became very important especially for international players to foresee and overcome the possible problems and solutions in advance in accordance with international or foreign law, rules and regulations (Sertyesilisik, 2006). Whitecotton and McPherson (1992) state that the contract documents may be the single and most important factor for a contractor in selecting a job to bid, regardless of the owner's nature, the quality of the engineer's design, or the experience of the company, the contract documents can nullify all other positive attributes of a project (cited in Haddad, 2007). Haddad further cites from Sweet (1993) who mentions that the clearer and more accurate the construction contract is, the more predictable the project. According to Haddad, an accurate and clear contract will open the way for a more predictable and stable relationship which is expected to result in achieving project goals, thus benefiting all parties. Zaghloul (2005) cites Sweet (1992) who defines a good contract as:

> “A good contract clearly informs each party what it must do and to what it is entitled. It also informs each party of its rights if the other party does not perform as promised. It anticipates the likely problems and resolves them clearly and in a way that strikes the parties as reflecting a proper allocation of risks and responsibilities. It also reflects the realities of contract administration, and does not require procedures not likely to be followed. A good contract principally provides a set of working rules for the contracting parties and secondarily addresses judges or arbitrators who may be called upon to interpret it.”

Engineering contracts share many features in common with other types of contract but often distinguished by their size, complexity, technical content and time-scales (Ribeiro, 1996). Construction contracts are fundamentally different from major service contracts (OGC, 2002). A construction contract is actually a series of different documents incorporating with each other, which when taken as whole set out the entire understanding between the owner and the contractor, and reflect the expectations of a favorable outcome (Zaghloul, 2005). The contract documents defining the contract on the other hand are complex and comprehensive (Tword and Rees, 2003). When the original contract was not reasonable or the party concerned did not fully understand the obligations entered into, disputes may arise (Love, 2007). Moreover while working in a wide geography contractors encounter different laws, languages, practices and cultures (Sertyesilisik, 2007). The need for a common language and common understanding all around the world emerged due these two circumstances and as a result standard forms of contracts those are inherently fair to all parties evolved (Sertyesilisik, 2007; Love, 2007). Standard forms of contract are readymade terms and conditions (Kwakye 1997 cited in Anderson and Gunnarsson, 2002), typically produced by a professional body or trade organization and which the law considers to be fair to both parties and consequently does not interpret the conditions against either party's interest (Love, 2007). According to Love such contracts are generic in the sense that negotiation between the parties is simply a question of agreeing key issues such as cost, delivery dates, penalty clauses, etc. The purpose of standard forms of contract is to facilitate the contractual arrangements between actors in a project, persons using them become familiar with their overall content as well as their particular strengths and weaknesses in time (Kwakye 1997 cited in Anderson and Gunnarsson, 2002). This major advantage is also discussed by Broome and Hayes (1997) as cited in Usta (2005) with a further remark that parties also become aware of the contract's suitability for their own specific purposes and this reduces the number of disputes and misunderstandings and it

is possible to use the contract, safe in the knowledge that what is learnt today will not be redundant tomorrow.

The most common and complained problem in construction companies is the poor record keeping as most managers believe that their primary job is to construct the project not to build monument of documentation (Ilgar, 2005), on the other hand administration of the contract requires accurate records as a permanent record of the contract process and in the event that the project manager would need to negotiate a change order, prepare a claim, or reconstruct specific events, the project data from records and correspondence are often needed (Smith2003) because they tell what has happened in the project (Anderson and Gunnarsson, 2002). Consequently Jergeas and Hartman (1994) highly recommend keeping good records and communications as a means of avoiding claims and disputes in construction projects. The project manager and staff should maintain a formal filing system of contemporaneous project documentation (Usta, 2005). According to Usta during the course of a project, the amount of paperwork can seem unduly burdensome and unnecessary; however, as disputes and claims arise, their value will become apparent by the man-hours and money saved. OGC (2002) noting importance of keeping the contract documentation up to date highlights that it should not be a burden. “The effort required may be reduced by ensuring that the contract is sufficiently flexible to enable changes to the requirement and pricing mechanism within agreed parameters without needing to change the contract documentation” (OGC, 2002).

2.3.1. Claims

Any breach of a term of a contract in theory entitles the party not in breach to claim damages, or to deduct damages from any unpaid part of the price (Ribeiro, 1996). A claim is a right given to the party who deserves a request for compensation for damages incurred by any party to the contract (Simon, 1979

cited in Ilgar, 2005; Semple et al., 1994), it is to say, the seek for consideration or change (to contract terms), or both, by one of the parties, to a contract based on an implied or expressed contract provision (Dickmann and Nelson 1985 cited in Jergeas and Hartman, 1994). Although cost are usually at the heart of the issue, contractual claims may also have substantial effects on deadlines and frequently result in unwanted, negative effects on quality and time schedules (Grutters, 2007).

Adrian (Adrian, 1993 cited in Ilgar 2005; Adrian 1998, cited in both Krone, 1991 and Ng et al. 2007) defines construction claims as a request by a contractor for compensation over and above the agreed-upon contract amount for additional work or damages supposedly resulting from events that were not included in the initial contract. In other words construction claim is an application by the contractor for a payment other than those under the ordinary contract payment provisions (Jergeas and Hartman, 1994). In addition to these 'cost perspectives' of construction claims Abdul-Malak et al. (2002) introduces 'time perspective' referring various studies (Clough and Sears 1979; Jervis and Levin 1988; Barrie and Paulson 1992) and defines construction claims as a request by the contractor for an extension of time and/or additional cost that can evolve into a disagreement which may not be amicably resolved by the parties concerned.

Nevertheless it should be noted that it is not only the contractors who is to suffer in a contractual relation and thus assert claims. As Abdul-Malak et al. (2002) underlines in any construction project, significant additional costs can be experienced by the contractor, the owner, or both, due to the actions of the other party or parties involved and a construction claim arises when a party to a construction contract believes that in some way, by act or omission, the other party has not fulfilled its part of the bargain (Levin, 1998 and Kartam, 1999 cited in Kululanga et al., 2001; Semple et al., 1994). For example a contractor may consider a work to be outside the scope of the contract, which the engineer does not recognized so (Kreitzberg, 2000 cited in Usta, 2005), so that he incurs additional costs and/or there is a delay (Jergeas and Hartman, 1994) or the

owner may consider that the contractor neglect or delay his part under the contract (Revay 1990 cited in Jergeas and Hartman, 1994). “Therefore, a construction claim is an assertion of and a demand for compensation by way of evidence produced and arguments advanced by a party in support of its case” (Kululanga et al., 2001).

Various researchers list numerous reasons for construction claims. Adrian (1993 cited in Ilgar, 2005) blames relatively low profitability of the construction industry and changing of product delivery as drivers for claims. Kumaraswamy et al. (1998 cited in Ilgar, 2005) based on their survey among 91 projects lists; unclear or inadequate documentation, late instructions, variations initiated by the employer/engineer, measurement related issues, inclement weather, and time extension assessment as most crucial reasons of claims. A survey study by Semple et al. (1994), which covers 24 projects, on the other hand reveals; increases in scopes, weather conditions, restricted access, and acceleration, as the most common causes of claims. In addition to some of the factors above Jergeas and Hartman (1994) lists further reasons for claims as; inadequate bid information, inadequate investigation before bidding, insufficient time for bid preparation, unbalanced bidding, faulty and/or late owner-supplied equipment and material, inferior quality of drawings and/or specifications that give rise to ambiguities in contract requirements, stop-and-go operations because of lack of coordination, design information, equipment, or material, work in congested areas and overcrowding, and underestimation.

The increase in contract claims, consultants, and attorneys can be thought as an indicator of designers’ and contractors’ ability to deliver quality products without litigation, however it is commonly heard that contractors actively seek claims for profit (Smith, 2003) because claim is a tool used by contractors to request more time and/or money (Jergeas and Hartman, 1994). According to Ilgar (2005) the concept of claim management has spread widely among many companies in construction sector since 90’s, as it works well against the clients by providing additional profits to contractors. Ilgar calls this circumstance as:

"Each party to the contract is aware of their rights and responsibilities where the contractor is also aware of the opportunities to claim additional time or cost in particular to prescribed conditions." Zack Jr. (1993) on the other hand defines this circumstance, which he called 'claimsmanship', as: "the art or practice of making and winning claims by questionable expedients without actually violating the rules." One result of this claim game as given by Ilgar (2005) is client's understandable dissatisfaction at being enforced to release large additional payments beyond the sums initially budgeted and assumed to be sufficient. Consequently owners and design professionals took part in the claim game (Zack Jr., 1993) and also reflect their heightened awareness of the potential for claims by using restrictive contract language (Smith, 2003). Grutters (2007) highlights the importance of the quality of the construction contracts, for which the contractors are not responsible, in the searching and producing of arguments for contractual claims. According to Grutters: "The contractor simply makes use of the opportunities provided to him by the relevant construction contract clauses."

As given by Vidogah and Ndekugri (1997): "Claims are becoming a way of life (Barrie and Poulson 1992; Latham 1994). They are natural and according to Bradley and Langford (1987), inevitable, and indeed an indispensable part of modern contract systems." Abdul-Malak et al. (2002) suggests that these inevitable parts of modern contract systems are moreover an inevitable burden in implementing today's construction projects. To support his view Abdul-Malak et al. suggest there factors; (1) while the successful completion of projects has been thought to depend mainly on cooperation between the parties, problems and disputes always erupt due to conflicting opinions as to the various aspects of design and construction, (2) the increased complexity of construction processes, documents, and conditions of contracts has been contributing to higher possibilities of disputes, conflicting interpretations, and adversarial attitudes, (3) the exhausting and expensive process of litigation has not been making things easier, as unsettled claims that have developed into disputes can

take a very long time to be resolved. As Jergeas and Hartman (1994) states the probability of a claim arising at some point in time is a fact of life on most construction projects, in recent years, as a result contractors have become increasingly concerned with claims, their associated costs, and the poor recovery of actual costs associated with their settlements. According to Jergeas and Hartman it is in the interest of every contractor to familiarize himself with the means to avoid claims or to be ready to mitigate the consequential damage there from.

The contract, although identifying the circumstances where claim may be made, often not exhaustive about how claim should be made (Scott and Harris, 2004 cited in Ilgar, 2005) and there is the need for a structured instrument for auditing construction contractors' in claim process in order to reduce time and cost increases (Kululanga et al., 2001). Such a framework, based on previous studies (Easton 1989; European 1996; Kartam 1999), is introduced by Kululanga et al., and covers seven elements which are claim documentation, claim identification, claim notification, claim examination, claim presentation, claim negotiation, and use of total quality management tools to prevent construction claims. In the following paragraphs these elements of claim process framework are given as they cited from Kululanga et al. with a few further notes quoted from other literature.

Claim documentation is the collection of the hard facts that give the actual history of a construction claim. A well-prepared defendant quickly demolishes evidence and claim costs that are not supported by accurate records. The documented facts are the glue that holds the legal framework together. If these are insufficient the claim will not stick. Thus in order to exercise and enforce contractual rights at any point in time it is absolutely essential that the corresponding original data is documented (Grutters, 2007).

Construction claim identification involves timely and accurate detection of a construction claim. This is the first and critically important ingredient of the

claim process. Thus, an awareness of job factors, which give rise to construction claims, is a skill that generally has to be specially acquired. Such learning not only sensitizes construction managers to potential construction claims, but also exposes company-wide problems to contract management.

Construction claim notification involves alerting the other party of a potential problem in a manner that is non-adversarial. Time limit requirements are very crucial and critical. An initial letter of a claim notice to the other party should be short, clear, simple, conciliatory, and cooperative. It should indicate the problem and alert the other party of the potential increase in time or cost. It is very hard to argue with someone who appears polite and sincere, helpful, and cooperative.

Claim examination involves establishing the legal and factual grounds on which the claim is to be based. This should also involve the estimate of the potential recovery. Such issues may have to be investigated by interviewing staff who worked on the project. The primary sources for claim examination could deal with project files, video footage, memos, etc., that must be used to prove the time and cost elements of the claim. A claim should present the basis of the claim (causes and effects), explains the contractual and legal basis for payment (entitlement), and quantifies the resulting damages (Semple et al., 1994). The basis of the claim arises from the project's legal or contractual provisions, these include in particular, the contract, but also the legal environment such as national law or international agreements; moreover minutes of meetings or other correspondence frequently become part of the contract and therefore must be considered separately as well (Grutters, 2007). It is also very essential to pay attention to have solid evidences and proofs instead of void aspersions, to be able to defend the claims while dealing with laws (Ilgar, 2005). The opponent will only be prepared to pay the proven costs that have been incurred and would question the claim if the causes are not clear, thus the evidence of costs must contain a detailed, clearly classified list of all the additional costs (Grutters, 2007).

A claim presentation should be logically built up, well organized, and factually convincing. Thus, a claim should be written in a format that emphasizes the fact that a contract requirement was breached. A contractor must then demonstrate the resulting harm was caused by the owner's acts. Atkinson (1985) has fittingly said that presentation is best separated into two, the entitlement and the quantum. The former section should have the legal and factual basis while the latter should provide the estimated recovery of the claim.

According to Easton (1989) a structured and proper negotiation preparation includes; (1) ascertaining that all information is current and complete, (2) minimizing the scope of negotiation beforehand so that insignificant points should not precipitate a violent argument and disrupt progress, (3) knowing one's weaknesses and trying to utilize weak points by conceding them in return from the other party, (4) foreseeing problems, and (5) anticipating the opposition's next move. To benefit from this stage, a construction contractor needs experts that have skills for negotiation. There is a saying that ''it is more important to be prepared than it is to be right.''

The factors that lead to loss of time, cost increases, and other determinants of underperformance can be linked to specific management weaknesses. Such factors are often associated with lack of application of total quality management tools. By implication the natural use of total quality management tools at every stage of a construction project should result in substantial time and cost reduction of a construction project.

CHAPTER 3

CONTRACT MANAGEMENT IN TURKISH CONSTRUCTION SECTOR

The title of the study “Contract management behavior of Turkish construction companies in international projects” involves four elements: Contract management, behavior, Turkish construction companies, and international projects. The last of these four elements is the scope of the study and is an issue for next chapter “the methodology”. The second “behavior” is the major focus of investigation and represented through the thesis with the survey itself and as chapter 5 “findings and discussions”. The first element and perhaps the heart of the study “contract management” is investigated through second chapter in order to give the reader a conceptual understanding on it. Finally the last element “Turkish construction companies” and its interaction with contract management is the topic of this chapter. For a better understanding on the behavior besides the concept of contract management, knowledge on the Turkish construction sector also seems to be helpful. Considering behavior is just the physical reflection of mental actions or reactions; without knowing its origin or the mental source, the knowledge on the behavior would be somehow incomplete. This chapter tries to investigate the Turkish construction sector; how its interaction with contract management developed, how it is sensed by

the observers, what are the factors that shape its mental actions that at the end turn to be its behaviors, and so on.

As mentioned in the introduction chapter: “Contract management is naturally emerged." This is to say it was not developed, and introduced as a management practice from some source but changing business environment force, those for who contracting is a part of their business, to evolve and involve in such a practice. When it is considered from this perspective for any business who makes contracts as a part of its trade the question is not whether they apply contract management or not. The question is whether they can successfully adopt themselves to this new business way or not.

The Turkish Contractors Association (TCA) at their website (www.tmb.org.tr) publishes all related figures indicating almost a continuous growth of the sector since 1970’s, when the Turkish contractors started to work overseas. Figure 9 illustrates the growth achieved in overseas projects by members of TCA only in the five years between the years 2002 to 2008 in billion USA Dollars (TCA, 2008).

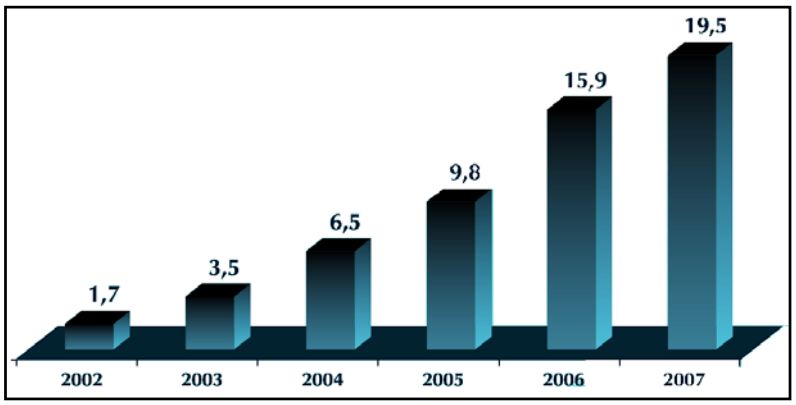


Figure 9 Overseas business volume of TCA members in billion USA Dollars (TCA, 2008)

The story for this almost continuous growth, together with the relevant figures, is discussed in various publications of TCA (Directory of Turkish Contractors; İnşaatçıların Tarihi, 2006) as well as their websites and also in several thesis studies (Akcamete, 2006; Saracoglu, 2003; Renda, 1995; Mesci 2006; Geler 2007), moreover in books of sector professionals or academic bodies (Demir, 2006, Nielsen, 2005). So this story of yearly changing countries, building structures and figures will not be repeated in this study. The major point is that the message of this story is an almost continuous growth and thus there is no need to argue or question the success of Turkish contractors in international contracting.

Various factors specific to Turkish construction sector such as cheap labor force, risk lover nature of contractors, and geographical and psychological advantages in working countries (Renda, 1995) plays important role in international success of Turkish contractors. However these advantages, which are mostly effective in achieving new projects or market entrance, cannot maintain such a continuous success unless they are together with a continuous achievement in project delivery. Therefore it can be claimed that one of the factors that Turkish contractors perform a growing success is their ability to satisfactorily deliver the projects or the contracts they undertake. Getting back to issue of contract management and considering that it is an inherent part of project management Turner (2006), which evolved and emerged naturally in contracting business and a matter of adaptation rather than application, it can be concluded that the continuous achievement of project delivery is an indicator of that Turkish construction companies, somehow, instinctive or technically but effectively manage their contracts.

However it must be confessed that there is still a doubt on professional management capabilities of Turkish contractors in Turkey. For a better understanding on Turkish construction sector, this doubt, which might be a thesis subject, must be underlined briefly. Perhaps one of the most frequent but not recorded response given to a never asked question of the survey reveals this

doubt. A majority of respondents before they reply to the very first question of survey; “What is the impact of Contract Management for the success of a construction company in the international market?” even though they knew that the survey targets only the leading companies, noted: “Almost everybody will mark very important or important however only few companies believes so”, and then marked either very important or important. Considering that these two options received 98% of responses, and without questioning the sincerity and honesty of respondents the only conclusion is that one of the major problems of Turkish construction is its poor reputation which shadows its success, and even worse this poor reputation is also within the sector itself. As a matter of fact this reputation problem is presented in various sources. TCA (2006) presents complaints of various sector professionals regarding this matter and notes the dramatic result of a survey of TCA which asks the participants to rate the reputation of different professions. The result of the survey displays that contracting as a profession has the least reputation in Turkish society. TCA moreover indicates that the problem also exists within the sector professionals and cites from Deveci (1998) who wrote: politicians, bureaucrats, and contractors all together benefits the public funds where the public bear lost. This triangle of politicians, bureaucrats, and contractors is frequently charged in the measures of standing of Turkish contractors, Genc (1992) match the relation within this triangle with wrestling. Some of the survey participators claimed that Turkish contractors, who are far ignorant in means of professional competition and construction, rely on this triangle. In conclusion sector is doubted and blamed with receiving and executing works in a way, which is far from being formal, organized and systematic. As previously noted such a doubt on Turkish contracting sector with all its reasons and impacts and solutions might be a thesis subject by itself, however without any research it can be claimed that one of the drivers of this poor reputation is that there are more 200,000 contractors (TCA, 2004) competing in the market. On the other hand it should be noted that according to TCA data, around 70% of all domestic and 90% of all international works of Turkish contractors are

executed by less than 0,1% of contractors (www.tmb.org.tr). So, it can be derived that even though the vast number of businesses all together creates a character image, the character, which perhaps is totally discrete, in fact represented by a very little enterprises. Conflicting with the beliefs and assumptions and doubts the character drawn by dominating enterprises is as figured in previous paragraphs quite contrary: Turkish contractors perform a growing success and are able to satisfactorily deliver the projects or the contracts they undertake, which requires formal, organized and systematic management of them.

Sertyesilisik, 2007 referring Dayınlarlı (2001) states that the Turkish construction companies working abroad in different countries where all have different procedures, law and practices, gradually gained experience in the field of contracts executed in different countries. In other words the adaptation of Turkish contractors to contract management and their contract management behavior evolved in time after they start execution of overseas projects. This approach proved itself through the survey of this study. Several contributors suggested that their companies faced with problems, difficulties and even bad surprises through their former international projects, which sometimes occurred despite their good-faith. The reason for so called entrance surprise, which also has a major impact on the adaptation of Turkish contractors to contract management, is explained by Mr. Orhan Barut who is an assistant general manager in one of the leading companies. Mr. Barut suggested that the contract management behavior of Turkish contractors is shaped by a country or cultural factor based on its historical origins. According to Mr. Barut almost all contractors now working overseas initially were working with Turkish government for public projects in Turkey, and during those periods they had to struggle with a strict bureaucracy, the roots of which go back to the Ottoman Empire where the country administration was unquestionable. The conclusion of Mr. Barut was that: “The Turkish contractors after years of working with an owner who is always decisive and unquestionable, could not develop a contract

management approach, where in fact there was no need and meaning to do so." Sahin (1998), in his thesis "the theory of bureaucracy and Turkish bureaucracy" affirms what Mr. Barut suggests about bureaucracy. Sahin states that bureaucracy is unique to each country and shaped with the economical, social, cultural, and political structures of the country where the history and former practices of the society creates a culture of bureaucracy. Thus Turkish bureaucracy is originated from Ottoman Empire. At the Ottoman Empire the whole authorization for all public administration was controlled by the sultan and the application was held by the bureaucracy, which institutionalized during the 'tanzimat era'[2] and became a property of republic after the Empire. The republic also rely on bureaucracy for the revolutions, and because many infrastructure projects executed by the public administration, bureaucracy developed rapidly and today it still holds its normative character (Sahin, 1998). Moreover supporting Mr. Barut's suggestion regarding the relation between the contractors and the bureaucracy many other survey respondents also complaint about exactly same situation and noted that for public projects in Turkey it is meaningless to try to seek for contractual rights which only would result in loosing prospective jobs. Thus Mr. Barut's argument reveals that the major factor, which shapes the contract management behavior of Turkish contractors, is an ethic of the business in Turkey. Rosenthal and Rosnow (1991) define ethics as the system of moral values by which the rights and wrongs of behavior are judged (cited in Lowe and Leiringer 2006). It can be implied that for Turkish bureaucracy, being questioned or argued with, is judged to be wrong and unethical, and is a valid reason for not to work with a contractor who has such habits.

[2] *meaning reorganization of the Ottoman Empire, was a period of reformation that began in 1839 and ended with the First Constitutional Era in 1876 (www.en.wikipedia.org)*

Knowing that his points on bureaucracy and its relation with contractors applicable, the only point to question in Mr. Barut's theory is: Whether such an ethic or such relations specific to a country can create a culture shared by the individuals or groups of that country by which they will behave similarly? Modern business behavior can be thought of as a product of internal and external forces that impinge upon the enterprise (McGuire, 1964) and according to Lowe and Leiringer (2006); behavior is dependent upon values and beliefs. Zwikael et al. (2005) figures that project managers in different countries run projects of similar nature, in different ways and one of the reasons of differences is cultural distinctions which, as given by Lowe and Leiringer, are manifested through facets of behavior. Lowe and Leiringer explain this as "culture is learned". They base their explanation on definition of Hofstede (1994), according to who, culture is the collective programming of the mind, which distinguishes one category of people from another. In brief it can be said that the values or believes (or ethics) as an external factor can influence various individuals or groups, to independently develop (or learn) a similar behavior which is specific to themselves and distinguishes them from others those do not impacted by similar values or believes. Supporting this derivation, Wu (2008), introduces the general behavior model in Figure 10. According to his model one's current behavior is contingent on his/her past behaviors, his/her revealed and stated preferences, the aggregates' influences and external factors or resource constraints either shared or unique to each behavior/person. Considering Mr. Barut's suggestion within the framework of this model it can be proposed that the habit of Turkish contractors to not to seek contractual rights or in other words not to manage their contracts during the period that they develop their businesses, as past behaviors, together with their values or ethics, as a culture influencing their preferences, impacted and shaped their behaviors when they first expanded to international markets.

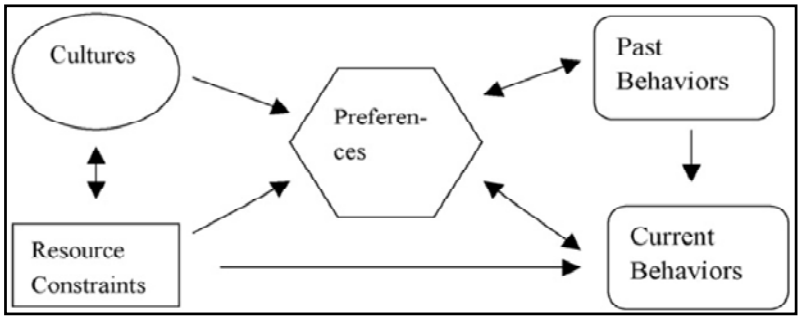


Figure 10 The general behavior model (Wu, 2008)

To summarize this chapter it can be concluded that in the means of contract management the Turkish contractors are mostly influenced by the very strong bureaucracy of Turkey. Bureaucracy initially sense contractors as a part or branch of public organizations (Akkaya, 1989 cited in Demir, 2006), however after this bind broken out around 1950's (Akkaya, 1989 cited in Demir, 2006 and TCA, 2006) this relation turned to be unilateral and with its values from the history bureaucracy played the role of the decisive and unquestionable owner of the projects. Contractors who are used to work with such an owner develop their behaviors accordingly resulting in a common culture of contract management, which waive contractual rights for receiving further projects of the owner. The contractors as they expanded to international markets, faced with perhaps less decisive, more questionable but on commercial basis more cruel owners. The first impacts of their developed behavior for several contractors in their former works were painful but educative. However Turkish contractors, in time, gained experience in international markets. In a changing environment where high competition pushes the profit rates down for everybody, they further adopt themselves to the changing environment and achieved success with their ability to complete their contracts which requires formal, systematic and organized means of processing. On the other hand the vast majority of contractors, who represent in fact the minority of jobs, are determinant in representing the sector. It is disappointing that besides all the success the perception on the sector is still negative and unfortunately this is even valid for sector's professionals.

CHAPTER 4

METHODOLOGY

It is given in the introduction chapter that Turner (2006) confesses how he find it interesting that, even though it is one of the inherent components of project management, the contract management is also one of the most widely ignored parts of the project management. Moreover, it is also given that the foundation of this thesis study is constructed on the reflection of this interesting point on Turkish construction sector. Questions suggested at the introduction are: How does the Turkish construction sector approach to the concept of the contract management. Do the Turkish contractors ignore it or at least they are aware of its emergence? Is there any successful contract management implementation if they are already aware of the importance of it? What are the factors that release or restrain their behaviors and what are the factors that they believe are to be critical for successful contract management. How do they organize for a successful contract management and does it make a difference? Finally what are their headaches, that they struggle with most and how do they handle them?

In order to be able to answer these questions a survey is composed and interviewed with sector professionals. The survey results, within its scope and limitations, reveal the answers for the above questions. Before proceeding to

the results, the questionnaire based to the survey and the data collection and analysis processes are introduced through this chapter.

4.1. Questions Design

The literature, especially the literature out of Turkey, contains numerous works that involves a survey study regarding specific or focused topics of contract management, such as impact of contract types, claim issues, and delay reasons. On the other hand this thesis has a much wider scope as it tries to investigate the behavior for the whole contract management approach, including its all more specific issues; in order to answer the above questions about Turkish construction companies. The major limitation for scope is targeting international projects. As previously mentioned there are more than 200,000 contractors in Turkey (TCA, 2004). In other words, as sector professionals also noted, anybody who has a capital around a few hundred thousand USD is a competitor in the market, whether he is aware of engineering or not. So this study focused to international projects where Turkish contractors compete against global construction players with all means of engineering and management requirements. International project concept of the study covers the projects that the country of the project or at least one of the parties, the owner (or the representative), the partners, or other contractors is/are not turkey or turkey oriented. Those projects constructed in Turkey with foreign partners, or constructed overseas with Turk partners are count to be international projects. A second limitation of the scope is that the investigation was held only for the contracts between the owners and the contractors in other words the upstream contracts. Turner (2006) states that a project may be called to be a temporary nexus of contracts. Besides the one with the owner, depending on the size of the project, there might exist many other contracts for a contractor. These downstream contracts signed with partners, subcontractors, and suppliers are as well of significance and require an effective management in

order to achieve the success for the project. As the scope of the survey as upstream contracts is already wide, for this study it was decided to focus on upstream contracts, and similar investigations on downstream contracts are left to the further researchers who may find it worthwhile to study.

With such a wide questionnaire which covers many sub-topics with enough number of questions, the major difficulty is the applicability of its survey among professionals. Because the surveys seeks a behavior (or company cultures) the respondents are needed to be chosen from company employees who are able to represent the company culture thus they have to be either from managerial levels of the company body or if they are project personnel they have to be both at managerial level and have to be worked for enough duration at the company to know its culture. Such critical personnel are well known with their packed schedules and agendas which is sharply conflicting with the aim of a wide and long comprehensive survey. As a result the major or dominating factors that shaped the questionnaire design are the need to do a comprehensive survey and contradictory with it the need to keep it as short as possible. To overcome this dilemma it was chosen to use closed end questions that the participators can pick their options without considering and arguing too much, or asking other staff. Moreover to handle the dilemma the questions and options had to be very carefully designed. Such a design requires a sensitive selection of questions and options which precisely investigates the real factors that contributors would like to mention if they were given open ended questions with sufficient time. Also in order to prevent time losses, such a design requires elimination of questions and options of those factors which do not have a strong impact on behavior. To achieve the adequate design therefore for any question and option the background gathered from various sources like previous academic surveys or studies, and the Turkish sector analyzed through TCA publications to correlate these sources with their reflections in current Turkish contracting sector. The resulting questionnaire, which needs 35 minutes for completion for its 10 pages of questions, therefore received relatively high rates from options'

impacts point. Some contributors sensed it as a list of vital items which they have to agree and check so. For some this view of contributors' might shadow the efficiency and standing of the survey. However it might also and perhaps should be perceived as the high awareness of Turkish contractors about the concept and needs of contract management. For the time being and within this thesis study the decision is to the reader who can find the questionnaire design in following paragraphs. Further comprehensive studies on behavior of Turkish contractors' behavior regarding the more specific divisions of contract management like; impact of contract types, claim issues, and delay reasons would widen the perspectives and knowledge on the issue.

The survey, which is total of 11 pages, consist of a cover page, which introduces the scope of study, and 5 sections of questions; company profiles, contract management, company contract management organization, claims, and disputes and resolutions.

The first section aims to gather very basic knowledge about the contributing companies and asks their sizes and active durations in the sector and international markets. The size of a company might be an ambiguous question. What is the measure? Yearly revenue or profit of the company, number of employees, number of current or completed projects, or the contract amounts of current or completed projects? Moreover as previously mentioned with the targeted personnel time was a matter of issue, and asking above items would cause time loss due to contributors' need for seeking the relevant figures. Therefore the size of the company asked independent from any figures, and left to the respondents' judgment and their comparison of themselves with other competitors.

The second section, contract management, targets to measure; companies' approach on contract management and its functions, factors that the companies consider to have an impact on their behavior, and the strategies and the project processes that the companies rely for success. First the respondents were asked

to rate impact of contract management for the success of a construction company in the international market and to rate the weight given to 3 basic functions of it as their business practice. Following the respondents were given four options as contract management must be applied in every stage of cooperation (Continuous Application), must be applied in order to avoid problems in cooperation (Protective Application), must be applied when a problem arise in cooperation (Claim Management), and contract management is an inapplicable academic management theory. Respondents were asked both to choose the best option that reflects their opinion and the best option that reflects their company's practice in order to measure the difference between awareness and application. For those, who consider contract management as applicable, the differences between application methods described as they are given in figure 11 below. It should be noted that continuous application presented as a project management philosophy of company culture. On the other hand Jergeas and Hartman, (1994) states that: "All too often contractors do not read the contract document before bidding and, in many instances, not even when they execute the document. It is our experience that few contractors take the time to carefully read and understand the contract and, thus, too often the claim consultant is the first person, after the fact, to read the entire contract document."

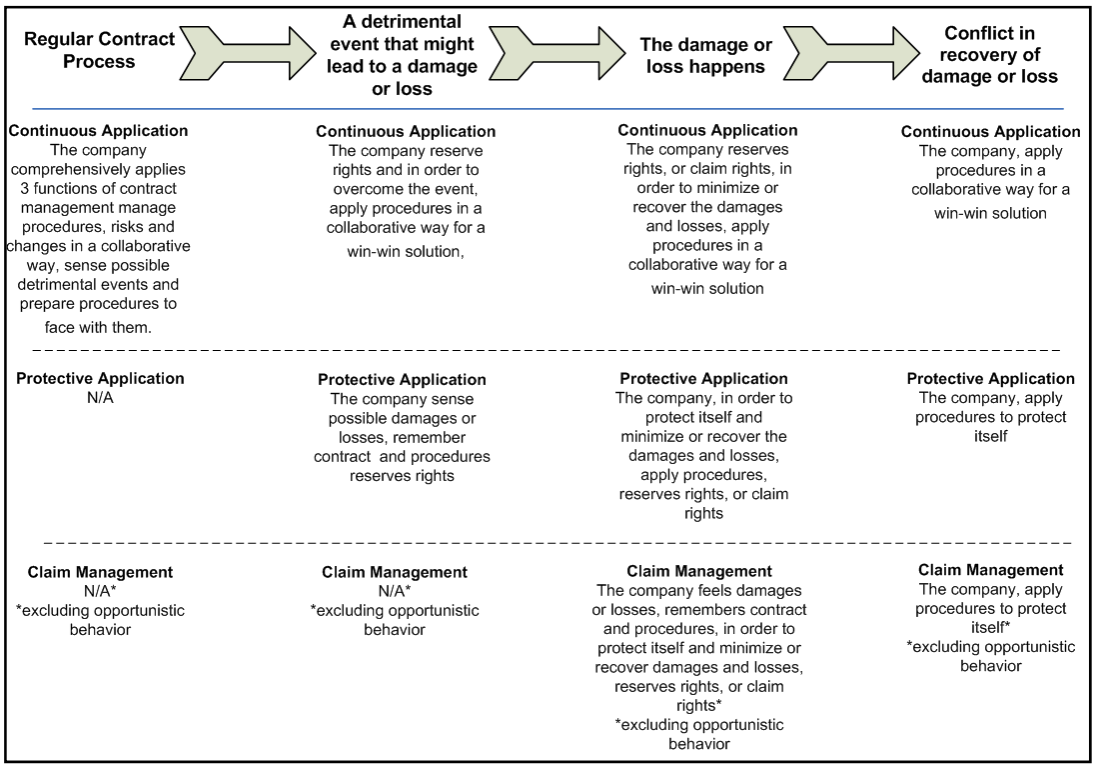


Figure 11 The differences between the applications methods as presented to the survey participants.

Following in second section, respondents were asked to evaluate some factors and dependent sub-factors for their impact on company's emphasis on contract management and attention to its application. These factors are based on project, owner, relation, and contract variables all of which expose specific risks to the project. One of the factors is the country of the owner. The culture and country conditions have an impact on behaviors of individuals and organizations, which effects the relation. The question is: Does this influence the attention of contractors on contract management? Country groups for this question initially determined as; EU countries, Middle East and North Africa countries, former Soviet countries excluding Turkic states, Turkic former Soviet countries, Turkey, and others. Turkic states of former Soviet countries separated due to their strong historical and cultural binds with Turkey. However the

participators of pilot interviews suggested that the Middle East and North Africa countries should be analyzed under three headings as; Afghanistan and Iraq, which are subjected to an ongoing war, Middle East and North Africa countries like; UAE, Qatar, etc. where quit strict regulations are on application, and finally Middle East and North Africa countries like Yemen, Libya, etc. where a comparatively more corrupted system and loose regulations exist. For the rest of the study this improved region separation was used.

Further in second section strategy perspectives of companies are investigated. Through literature survey and commercial documents, the strategies or practices that cited as effective are chosen and listed under five different processes of contract management, which are; per-tender, pre-contract, regular contract (construction), claim, and dispute processes. The first includes items regarding the choice of owners and projects, and comprehensive studies of tender documents, where the second includes items regarding contract build up. For the regular contract process the strategies or practices presented can be listed within three main elements of contract management, which in brief are; relationship, project delivery, and contract administration. Claim process heading listed the six of seven elements of the claim process framework presented by Kululanga et al. (2001), together with two other strategies, which offer choices about claims and the relationship between the parties. The framework of Kululanga et al. consist of elements; claim documentation, claim identification, claim notification, claim examination, claim presentation, claim negotiation, and use of total quality management tools to prevent construction claims. Total quality management, is a business management strategy aimed at embedding awareness of quality in all organizational processes (www.en.wikipedia.org), and its implementation is a major organizational change that requires a transformation in the culture, process, strategic priorities, beliefs, etc. of an organization (Motwani, 2001 cited in Pheng and Teo 2004). Even though it has benefits on claim management and contract management processes, which might be a thesis subject, because it is business

strategy and not a practice to employ on temporary project management context this last item of claim process framework of Kululanga et al. is excluded from listed strategies. The dispute process heading includes five items for participants' consideration. One of the options asks companies to rate their opinion on the bindingness of the resolution method. This option was introduced to respondents as; it measures their preferences on litigation, arbitration or alternative dispute resolution (ADR) methods. The other four options based on Cheung's (1999) study. As introduced in section 2.1.3 of this study Cheung lists five factors derived from twelve critical attributes of ADR processes; settlement agreement, benefit, nature of proceeding, outcome of the process, and process of proceeding. Cheung's survey demonstrates that the ADR users are most concerned with the 'benefits' that can be obtained by adopting an ADR and 'the process of the proceeding'. The critical attributes of these two most rated factors as given by Cheung, are; the cost involved, preservation of relationship, the parties' ability to control over the proceeding, flexibility of the proceeding, and the duration of the proceeding. Among these factors the cost involved, preservation of relationship, and the duration of the proceeding are presented in the questionnaire as other three options to rate. The fourth and last item introduced under the dispute process heading based on Cheungs study derived from two items; the parties' ability to control over the proceeding, and flexibility of the proceeding and introduced as the manageability of the proceeding. However through the surveys it was figured that the Turkish wording for this option can lead wrong interpretations, therefore all participants before they start evaluating dispute process informed about this options and asked to consider it within Cheung's attributes. Finally in the second section the five processes listed and respondents was asked to rate the impact of the processes in contract management success considering the right strategies applied during each stage. In other words the period, when the successful contract management is found to be more effective and beneficial, is investigated.

The third section of the questionnaire focuses on companies' contract management organizations. The examination carried out for both the general enterprise organization and its temporary project organizations. For both initially it is asked whether the company employs contract managers or not and following a two dimensional form supplied. Horizontal axis of this form contains per-tender, pre-contract, regular contract (construction), claim, and dispute processes of contract management together with three decision points which are; the contract acceptance, decision for preparation of a claim, and decision for getting in to a dispute process noting dispute is a disagreement that requires a final determination, which is aided by the intervention of a third party (Peña-Mora et al., 2003 cited in Ng et al., 2007). The vertical axis on the other is composed of individuals and groups or departments of the company and its project organizations. Given this two dimensional structure the respondents asked to mark individuals/departments who participate in different processes for both the company headquarter and project organizations.

The heading of fourth section of the questionnaire is "claims". Note that claim was defined in the section 2.3.1; as an assertion of and a demand for compensation by way of evidence produced and arguments advanced by a party in support of its case (Kululanga et al., 2001), when a party to a construction contract believes that in some way, by act or omission, the other party has not fulfilled its part of the bargain (Levin, 1998 and Kartam, 1999 cited in Kululanga et al., 2001; Semple et al., 1994). In this chapter the factors, those gathered from literature (Odeh and Battaineh, 2002; Assaf and Al-Hejji, 2006; Acharya et al., 2006; Harmon, 2003; Semple et al., 1994; Jergeas and Hartman, 1994; Sweis et al., 2008; Yates and Smith, 2007; Sertyesilisik, 2007; Gurdamar, 1980; Ugur, 2007) and may lead a party to such a belief presented. The factors are given as; accidents, design errors, owner based reasons, contractor based reasons, contractual reasons and force majeure. Some more sub-factors for both owner based and contractor based reasons are also listed. Given these factors

respondents were asked to evaluate the frequency of occurrences of each factor and moreover to rate their impact on conflict occurrence when they occur.

The last section of the questionnaire tries to investigate the conflict and dispute behaviors of Turkish contractors. Contractors first asked whether they believe a successful contract management decreases the numbers of conflicts and disputes or not. Following they were given negotiation, litigation, arbitration and others (others includes alternative dispute resolution methods) as options and asked to rate the frequency of employment of each. As the very last question of the questionnaire, for each type of resolution given above and for both time extension and cost claims, the respondents were asked to indicate the percent their companies' roughly win and to rate the success they perceive for this percent win. The initial aim of this question was to measure the success perception of contractors like; "for type A claims with type B method of resolution Turkish contractors consider X% of gain as a moderate success and Y% of gain as an important success." However throughout the survey it was realized that such a % gain versus success rate correlation would not be representative because of the claim games involved. One such game mentioned by participants is: "asking double of what is needed and thus achieving a 100% success even if they receive half of it." Moreover at first interviews the number of participants, who noticed that they cannot supply adequate % rates, was quite high. Therefore after these initial interviews the respondents were asked to skip % rates and consider question only as: "rate the company success you perceive for each type of resolution given above and for both time extension and cost claims." Those participants who could not supply % rates at initial interviews were also asked to do so.

4.2. Data Collection

The first question raised after the questionnaire, which is presented in detail at the previous section, completed was: "how to conduct the survey?" To answer

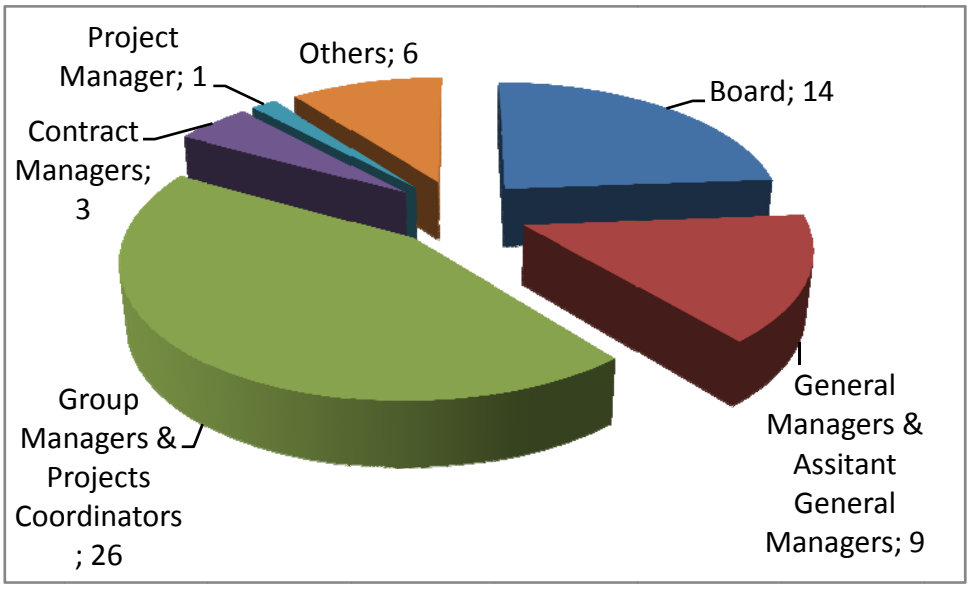
this question previous studies that contained a survey were analyzed and it was found that many similar surveys (both executed in Turkey and out of Turkey), which had chosen to be done via mail, e-mail or a web-site, received relatively low respond rates. The author on the other hand did not want to resort to hundreds of companies and then sit and wait for the respondents who are kind enough, hence decided to chose the right and representative small number of companies and resort them with references. Therefore these methods, which are cheap, easy and theoretically able to access comparatively large number of respondents, are all eliminated and the other option face to face interviews applied. Gurdamar (1980) defines interviews as: "Direct interviews consist of three interacting components; the respondent, the interviewer, and the questionnaire. Each of these as well as the interviewing situation has an important influence on the result. The advantage of the interview especially when it is performed by a skilled interviewer is its flexibility. The interviewer can also make sure that the respondent has understood the purpose of the research and the questions. The disadvantage of this method, on the other hand, is that there are possibilities of bias."

In this study, the three major advantages seek with having an interview survey were; (1) to ensure the responses on determined sample, (2) not to be limited with the survey and to gather everything that the respondents would like to share even though it is not asked, (3) and to make sure that the respondent has understood the purpose of the research and the questions as Gurdamar states. The last of these has proved itself as already discussed for a few questions in the previous section where the questionnaire design was introduced. After and despite the pilot interviews it is still not possible to ask all perfect questions or eliminate all ambiguity and even if these could be done it is still impossible to ensure that all participants perception is the similar on the same question. For example many respondents asked whether the option "handling claims with personal relations" refers for "bribing to owner representatives in public

projects" or not, where it was mentioned to rate "whether they would bear to some loss to keep existing good relations or not".

The first of these advantages on the other hand was still at risk because it was highly dependent on finding references from professionals visited. As previously mentioned because the surveys seeks a behavior (or company cultures) the respondents are needed to be chosen from company employees who are able to represent the company culture thus they have to be either from managerial levels of the company body or if they are project personnel they have to be both at managerial level and have to be worked for enough duration at the company to know its culture. It was also mentioned that such critical personnel are well known with their packed schedules and agendas, which is sharply conflicting with the aim of a wide and long comprehensive survey. The main handicap with these facts is both the decreasing willingness of professionals to direct the surveyors to other potential respondents and the decreasing response rates. However it was succeeded to achieve 51 responses out of 63 targeted companies, which is a quite high rate when compared to previous similar studies done via mails. For example Sertyesilisik (2007) in her survey for her doctorate thesis study, received 26, which after increased to 31 via visits, responses out of her 137 targeted and mailed firms. Moreover it should be noted that together with 8 companies, of which 2 representatives attended to the interviews simultaneously, out of 59 participants for 51 firms; 14 were board members, 9 were general managers or assistant general managers, 26 were either department managers or projects coordinators, 3 were contract managers, 1 was project manager and 6 were at other positions including lawyers, advisors, engineers. Graph 1 illustrates this distribution. As a result it can be claimed that this first desirable but risky advantage of interviewing resulted in a comparatively satisfactory success. It should also be noted for further researchers that some of the contributors stated that they frequently receive mail questionnaires, which even though they would like to response, they fail to remember and do not due to their tight programs. These

professionals noted that face to face interviews force and motivate them to response questionnaires. Therefore it can be advised to further researchers, who would like to execute surveys, to consider face to face interviews, rather than mail survey, if they can.



Graph 1 Distribution of Respondents according to positions

The second major advantage seek with an interview survey as mentioned before was, not to be limited with the survey and to gather everything that the respondents would like to share even though it is not asked. There is no need to argue the great amount of experience accumulated within professionals of Turkish contracting sector. Such a wide experience cannot be reflected to any study only by researches, and it requires interactions with individuals. In other words even a very detailed mail questionnaire that involves a vast amount of research background would not be able to gather this experience in individuals' minds. This desire clearly introduced to all participants before the surveys, and they were asked (if they would like to do so) to not to only reply the presented questions but to note and state anything they recall or find significant as they proceed on questions. The respondents with a great majority approached kindly

and with willingness to this request, and shared their experiences, where in some cases the interviews took more than 3 hours even though the required time to complete the questionnaire is only 35 minutes. These experiences can be found throughout the study especially in the following chapter, where the findings and results discussed.

Following the determination of the survey method the second challenge was to determine the target companies from over 200,000 (TCA, 2004) contractors in Turkey. The most important factor that shaped the selection of the target companies was the survey method decision. As given in the related paragraphs, rather than resorting to hundreds of companies via mails and trusting fate for kindness of respondents it was decided to chose the right and representative small number of companies and resort them with references. This is relatively easy because as it was previously cited from TCA website (www.tmb.org.tr) around 70% of all domestic and 90% of all international works of Turkish contractors are executed by less than 0.1% of contractors, who are less than 150 members of TCA. Knowing this still an extensive research done through, ENR lists[3] for years 2005, 2006, 2007 (www.enr.construction.com), TCA members (www.tmb.org.tr), INTES[4] members (www.intes.org.tr), contractors list for The Ministry of Public Works and Settlement, contractors list for General Directorate of Highways, and the sector professionals' opinions. At this stage over 300 firms searched through the World Wide Web and websites for over 200 firms visited. The countries and contract amounts for current and completed projects of contractors carefully analyzed. As a result of this detailed research, total 63 companies were chosen to be targets, with a geographic distribution of 38 from Ankara, 24 from Istanbul and 1 from another city. These 63 companies covers all 13 firms listed in ENR 2005, 19 of 20 firms in ENR 2006, and 21 of 22 firms in ENR 2007, where the same firm from both 2006 and 2007 lists excluded

[3] *Engineering News-Record The Top 225 International Contractors lists*

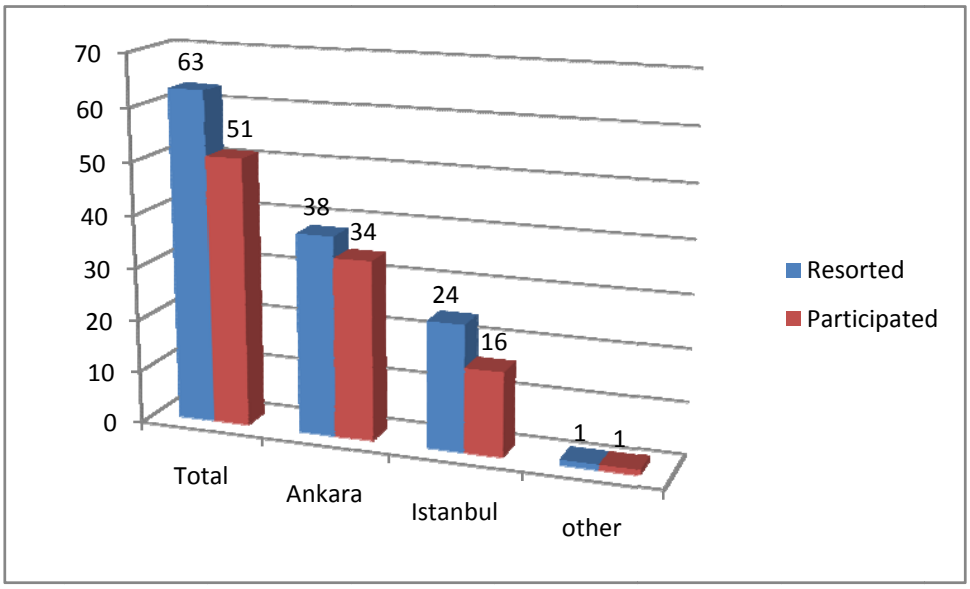
[4] *The Turkish Employers Association of Construction Industries*

because its headquarter is not in Turkey. Moreover initially 56 of chosen companies were TCA members. Of the rest 7, 1 was a joint venture company of 2 TCA members, 1 was a second group company of a TCA member, 1 company was specialized on manufacture and installation power lines and listed in both ICI[5] Turkey's Top 500 Industrial Enterprises 2007 list (www.iso.org.tr) and Capital[6] Turkeys Top 500 Private Companies 2007 list (www.capital.com.tr), 1 was listed in both ENR 2006 and 2005, 1 was listed in both ENR 2007 and 2006, 1 was listed in ENR 2007, and 1 had both a good reputation through sector professionals and a satisfactory reference projects list. During the survey process, 2 of the last 4 companies above also became members of TCA and the main view turned to be 58 TCA members over 63 targeted companies and 5 others. INTES membership however limited to 38 companies, noting that many companies are members to both associations.

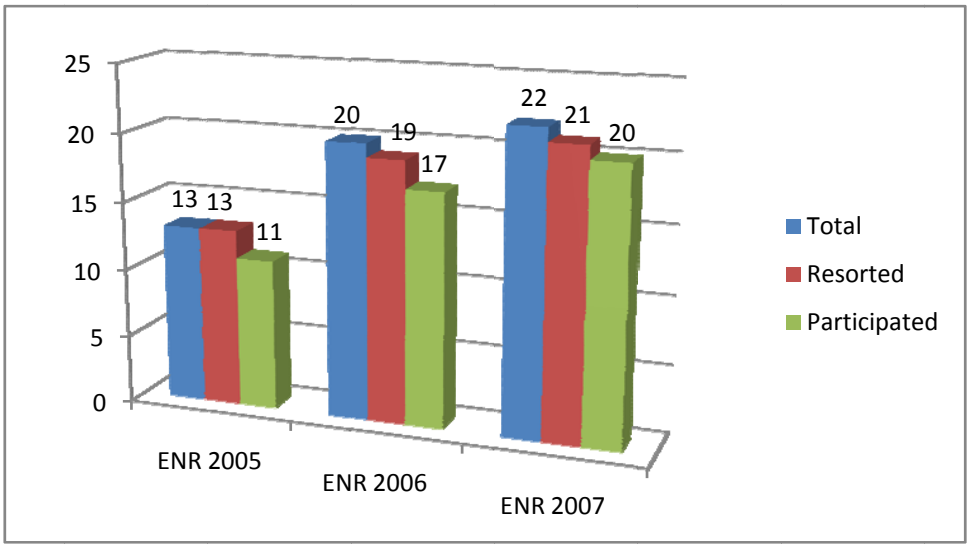
With the advantage that the surveyors based in the city, 34 of 38 Ankara targets successfully surveyed. This rate decreased to 16 of 24 for targeted Istanbul firms. One company based in neither of these two cities also responded. In total the number of firms contributed to survey is 51. These 51 companies cover 11 of 13 firms listed in ENR 2005, 17 of 19 targeted firms in ENR 2006, and 20 of 21 targeted firms in ENR 2007. Among TCA and INTES members; 48 of 58 firms and 33 of 38 members contributed respectively. Of 5 non-TCA members 3 firms participated to survey. Graph 2, graph 3, and graph 4 illustrate data on resorted and participated companies.

[5] *The Istanbul Chamber of Industry*

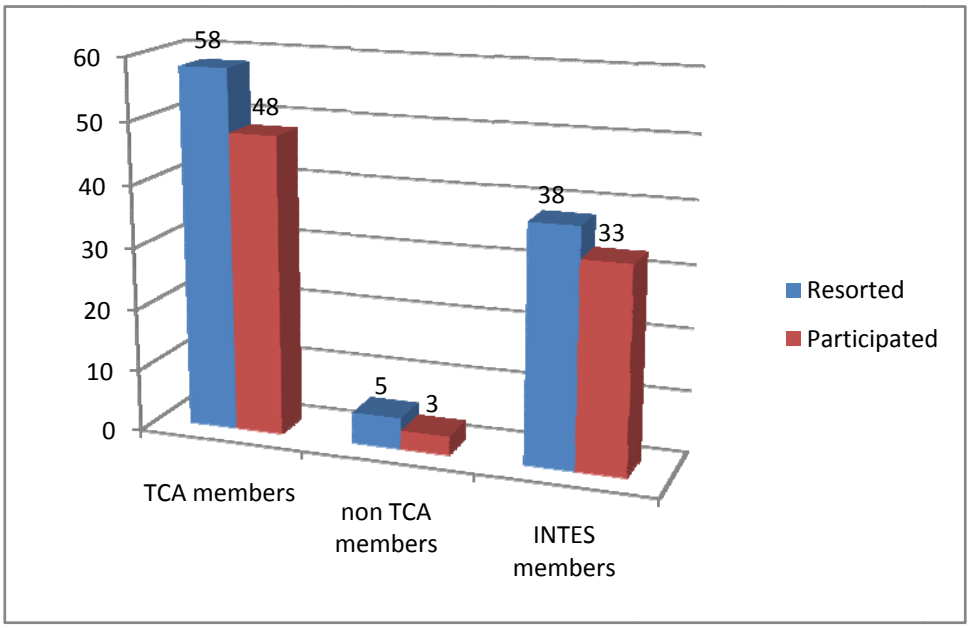
[6] *Capital Monthly Magazine of Business and Economics*



Graph 2 Total number of resorted and participated companies together with their geographical distribution



Graph 3 Total numbers of Turkish contractors listed in ENR Top 225 International Contractors lists for years 2005, 2006, 2007 and the numbers of resorted and participated companies from these lists

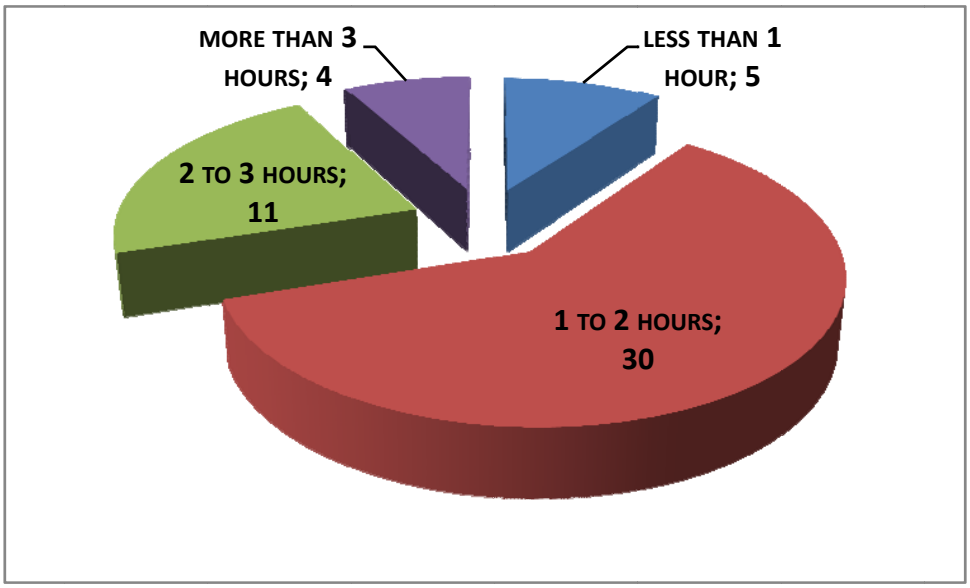


Graph 4 Numbers of resorted and participated TCA member companies and non-TCA member companies together with INTES members

Once the survey method and companies to survey are determined, TCA authorities contacted and were asked to evaluate the survey. TCA authorities, who are frequently resorted with survey requests from researchers or several organizations, thought to be familiar with the contractors' approaches on questionnaires. It is to say they know the impact of questions on respondents' willingness to answer. Following the questionnaire was arranged according to advises of these TCA employees, and two pilot interviews held. The respondents of these pilot studies, besides their regular contribution, asked to evaluate the questionnaire for its weaknesses like errors and biases. The questionnaire finalized with the last arrangements requested in these two pilot interviews. Some examples for such arrangements are given in the previous section: "questions design".

After the finalization of the questionnaire it was prepared in both ready to print PDF format and as a website (www.esurveyspro.com). Target respondents are

contacted and requested for a 45-60 minutes period, for an interview around a 35 minutes questionnaire. In order to provide that the target respondents get familiar with the questionnaire before the interviews, they were sent an e-mail which includes the link for web page of the questionnaire and PDF format as well as an attachment. The survey process last for 4 months, 2 months in both cities Ankara and Istanbul. Interviews held with 50 companies in Ankara and Istanbul, just one company from another city only responded on web page questionnaire and was not interviewed due to various constraints. As previously mentioned all participants, initially at the interviews, were requested to share their experiences if they would like to do so and asked not to only reply the presented questions but to note and state anything they recall or find significant as they proceed on questions. It was also mentioned that the respondents with a great majority approached kindly and with willingness to this request. As a result even though the time required to complete the survey is 35 minutes, with the contributors own will and volunteerism the requested 45-60 minutes period mostly exceeded. As graph 5 demonstrates out of 50 interviews; 5 took less than 1 hour, where 30 of them took 1 to 2 hours, 11 of them last between 2 to 3 hours, and 4 meetings exceeded 3 hours.



Graph 5 Durations of interviews

4.3. Data Analysis

After the 4 months surveying process the next challenge of the study was to analyze and treat the gathered raw data in order to convert it to information to present to readers. This requires applications and techniques of statistics, which is a mathematical science pertaining to the collection, analysis, interpretation or explanation, and presentation of data (www. en.wikipedia.org). Therefore the raw data tested and analyzed with means of statistics. The data analysis held with the assistance of two senior undergraduate students of METU Department of Statistics. All statistics software, and statistics methods and tests that employed were determined with preferences of these two advisors. Two software; SPSS[7], which is among the most widely used programs for statistical analysis in social science (www.en.wikipedia.org), and SAS/STAT® Software[8] were employed for statistical tests. With the help of these two software 3 types of tests were run in order to analyze the relations between the variables. Gamma test[9] was used to examine the relations between variables, those cross tabulated to analyze whether there exist an interaction in between or not. The alpha values compared to test the strength of the relations are given in Table 1. However the weak and moderate relations found through analysis were not reflected as the findings of the study, unless they reveal a significant perspective for consideration. In order to test the significance between the differences

[7] *Statistical Package for the Social Sciences, a product of SPSS Inc., which is a worldwide provider of predictive analytics software and solutions. (www.spss.com)*

[8] *A product of SAS company which is in business analytics software and services market. (ww.sas.com)*

[9] *A gamma test tests the strength of association of the cross tabulated data when both variables are measured at the ordinal level.* (www. en.wikipedia.org)

between mean responses and conduct multiple comparisons; ANOVA[10] with 0.05 smallest level of significance and Duncan's new multiple range test[11] were employed respectively.

Table 1 Gamma Tests Alpha Values Compared to Strength of Relations

Value	Strength of Relation
0 - 0.3	Weak
0.31 - 0.49	Moderate
0.5 - 0.69	Substantial
0.7 - 1	Strong

Another method used in data analysis was the preparation of rating indexes. Various factors or strategies rated in "1 - very unimportant – 5 - very important" scale by the contributors, were represented in rating indexes in order to obtain a comparison among these items. The indexing method was cited from Al-Juwairah (1997). In this method the scale "1 - very unimportant – 5 - very important" is weighted in "0 – 4" scale and consequently the index was calculated as given in table 2. Such a method as Al-Juwairah notes; returns an index equals to "0" when all participants indicate the factor to be very unimportant and returns an index equals to "100%" when all participants indicate the factor to be very important.

[10] *Analysis of variance (ANOVA) is a collection of statistical models, and their associated procedures, in which the observed variance is partitioned into components due to different explanatory variables.* (www. en.wikipedia.org)

[11] *Duncan's new multiple range test (MRT) belongs to the general class of multiple comparison procedures that use the studentized range statistic qr to compare sets of means.* (www. en.wikipedia.org)

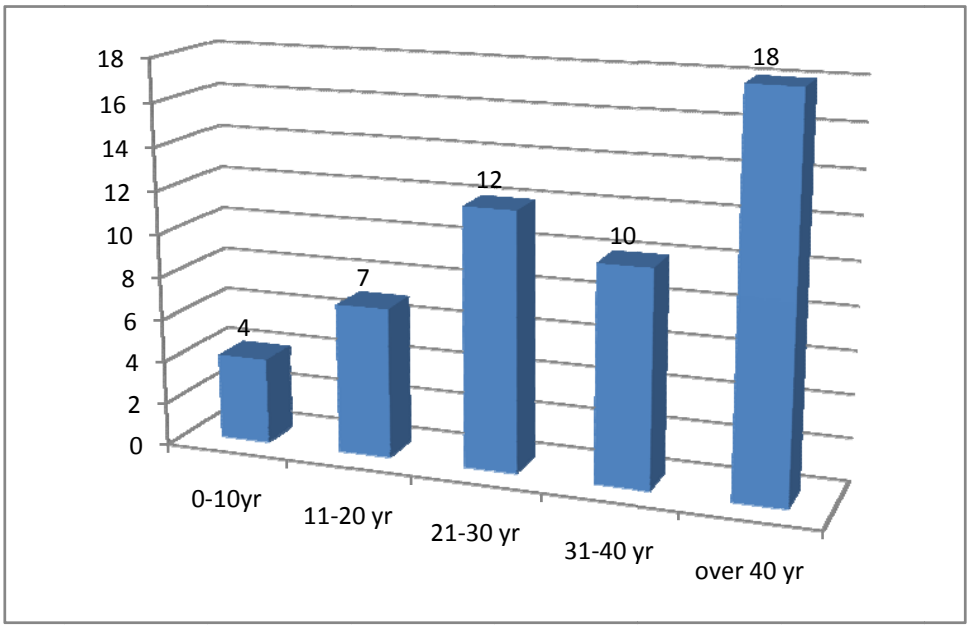
Table 2 Indexing calculations

	Weights	**Responses**	**W*R**	
very negative	0	R1	M1	**Index =** $\frac{\mathbf{MT / RT * 100}}{\mathbf{4}}$
negative	1	R2	M2	
neutral	2	R3	M3	
positive	3	R4	M4	
very positive	4	R5	M5	
TOTAL		**RT**	**MT**	

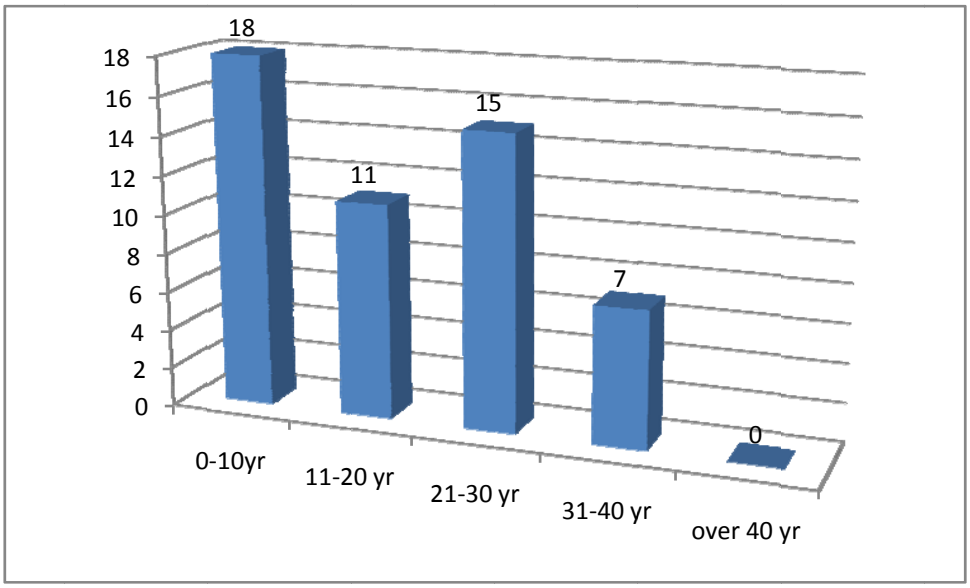
CHAPTER 5

FINDINGS AND DISCUSSIONS

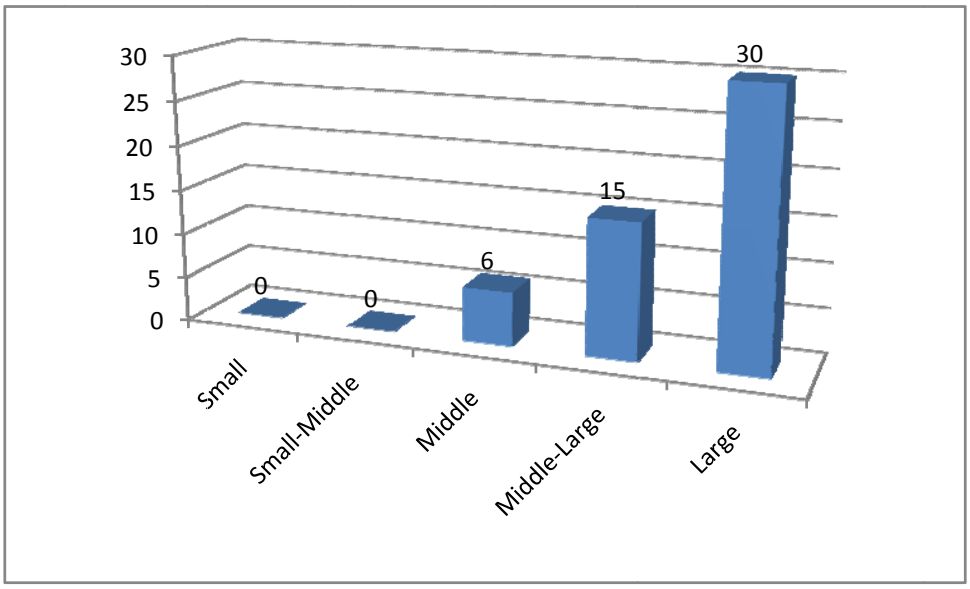
This chapter presents the information derived, via statistical means, from the data gathered from 51 companies throughout the 4 months survey. It might be helpful to briefly cite the basic information about the attended companies before the survey results. The companies were asked for the duration they have been active in the construction sector, for the duration they have been active in the international markets, and the representatives were asked to evaluate the size of their companies by comparing with other competitors according to their judgments. Graph 6 illustrates the duration companies have been active in the construction sector, the average duration for companies being active in the construction sector is 32.6 years with a standard deviation of 14.9 years. Graph 7 illustrates the duration companies have been active in the international markets, the average duration for companies being active in the international markets is 18.2 years with a standard deviation of 10.8 years. Graph 8 illustrates the size of the companies, 6 companies were described as middle size where 15 were described as middle to large size, and 30 were described as large size.



Graph 6 The frequencies of the durations that the companies have been active in the construction sector



Graph 7 The frequencies of the durations that the companies have been active in the international markets



Graph 8 The frequencies of the company sizes

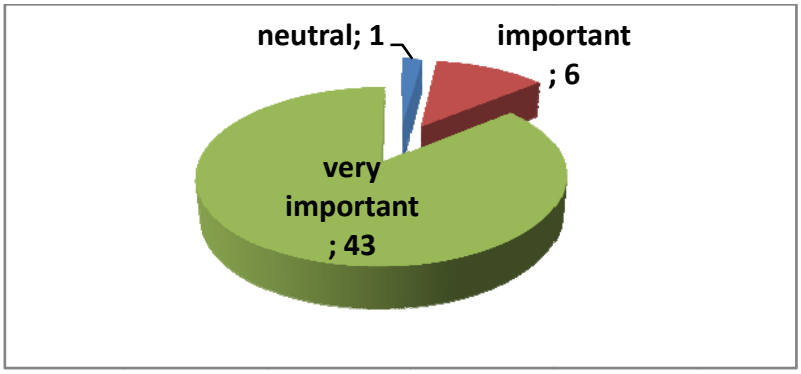
5.1. Contract Management Approach

As previously mentioned, the continuous success of Turkish contractors in international markets proves their ability to complete their contracts which requires formal, systematic and organized means of processing and an adaptation to contract management.

What is the impact of contract management for the success of a construction company in the international markets?

In order to measure the adequacy of this statement and the awareness of companies on contract management the very first question of the survey asked the respondents to rate the impact of contract management for the success of a construction company in the international markets. 50 of 51 respondents replied this question as illustrated Graph 9, the response rate of 43 very important and 6 important over 50 total responses indicates that the Turkish contractors are well aware of the need for adaptation to contract management in order to achieve success in international contracting. It should be noted that

with a gamma value of 0.462 as given in SPSS Output 1 and 2, the experience of the companies in international markets has a moderate relation with participants' consideration on impact of contract management to the success of a construction company in the international markets.



Graph 9 The impact of contract management to the success of a construction company in the international markets

SPSS Output 1 Cross tabulation of international experience with impact of contract management on success

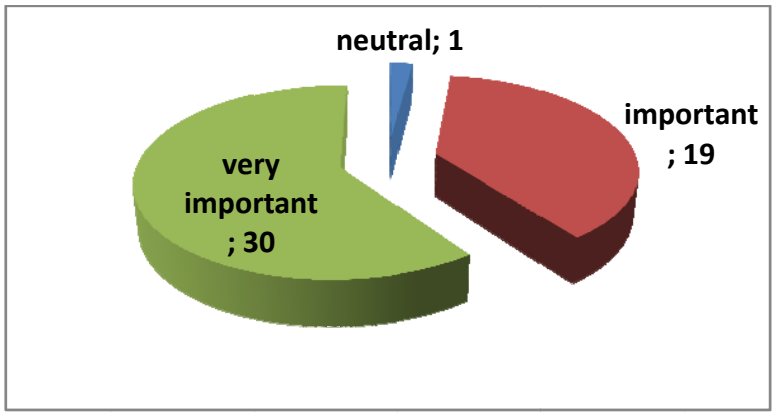
		Impact of Contact Management			Total
		3	4	5	
Internation-al Experience	0-10yr	1	4	12	17
	11-20 yr	0	0	11	11
	21-30 yr	0	1	14	15
	31-40 yr	0	1	6	7
Total		1	6	43	50

SPSS Output 2 Gamma value for cross tabulation of international experience with impact of contract management on success

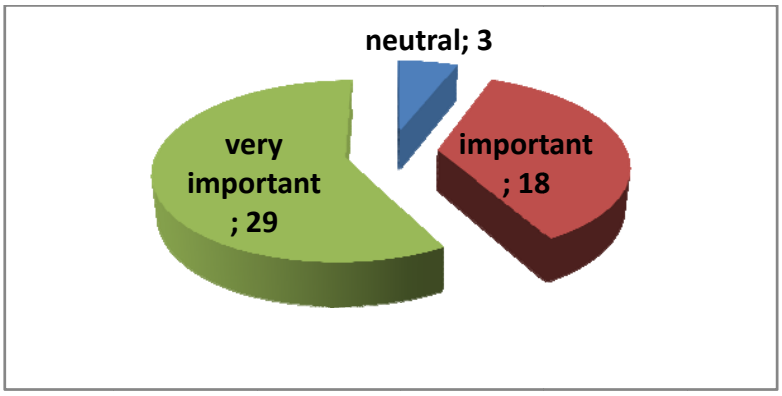
		Value	Asymp. Std. Error(a)	Approx. T(b)	Approx. Sig.
Ordinal by Ordinal	Gamma	.462	.329	1.306	.192
N of Valid Cases		50			

Weights given to 3 basic functions of contract management in business practice of the companies

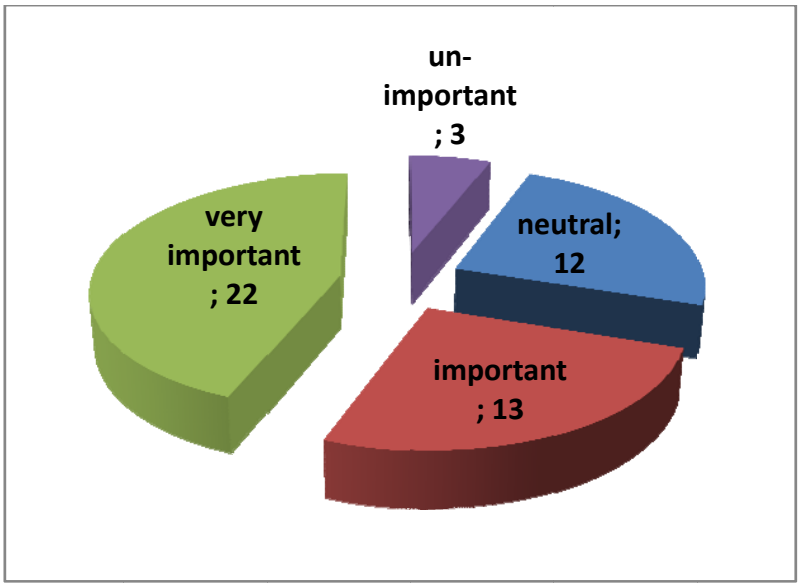
Following, in order to measure the reflection of their awareness on their business applications; the three main functions of contract management presented and participants were asked to evaluate the weight given to these functions by their companies in business practice. The responses on practical applications of these three functions, which are relationship management, project delivery, and administration of the contract, are illustrated in Graph 10, 11, and 12 respectively.



Graph 10 The weight given to relationship management in business practice



Graph 11 The weight given to project delivery in business practice



Graph 12 The weight given to administration of the contract in business practice

As it can be figured out from the graphs the contractors most care about the relationship management perspective of contract management. This might be due to various reasons, one of which is their culture. As it was given in the chapter 3 of this study Turkish contractors, while they are growing their businesses, work with Turkish bureaucracy, which is highly decisive and in most cases unquestionable. This situation frequently forces contractors to rely on relations rather than their contractual rights, and consequently this attitude settles as a business behavior. The second point is that a good relation and communication environment accompanied with it are key factors to overcome any unwanted circumstances that arise in contract lifecycle. This perspective was figured by several participants as they state that with obtaining a formal and as well a close relation, the shortcomings of other two functions can still be defeated. A gamma value of 0.620 indicates that the experience of the companies in international markets has a substantial relation with the weight given to relationship management in business practice, considering this relation it can be concluded that this second perspective influences the behavior more than the culture (SPSS Output 3 and 4).

SPSS Output 3 Cross tabulation of international experience with the weight given to relationship management practice

		the weight given to relationship management in business practice			
		3	4	5	Total
International-al Experience	0-10yr	1	10	7	18
	11-20 yr	0	5	6	11
	21-30 yr	0	4	11	15
	31-40 yr	0	0	6	6
Total		1	19	30	50

SPSS Output 4 Gamma value for Cross tabulation of international experience with the weight given to relationship management practice

		Value	Asymp. Std. Error(a)	Approx. T(b)	Approx. Sig.
Ordinal by Ordinal	Gamma	.620	.149	3.473	.001
N of Valid Cases		50			

The weight given to second function, the project delivery, rated very close to relationship management, whereas, the third, the administration of the contract, rated comparatively quit less, which overlaps with Jergeas and Hartman (1994), who claim: “Most contractors dislike paperwork”. Numerous participants attributed this outcome to the attitudes of individuals employed by the company. According to respondents contrary to company desires the Turkish engineers still work with their old habits. After years of working without too tight regularities they strongly resist against procedures and joined paper works. Ilgar (2005) also highlights this circumstance, as given in his work the most common and complained problem in construction companies is the poor record keeping as most managers believe that their primary job is to construct the project not to build monument of documentation. However the professionals who complaint this condition, when they were asked how does the control of the company over the individuals impact it, confessed that the

behaviors of individuals is characterized by the company's control on them as much as it is characterized by their habits. None the less the professionals argued that even though there is a vast range of opportunities for communication, the distribution in a wide geography and distances between headquarters and project sites still effective and cause in loss of control. This feature of construction working environment suits with what Lee-Kelley (2002) calls virtual teams, which she defines as an effective form for delivering large strategic, operational or commercial projects involving various concurrent and sequential activities by team members across various geographical localities (Lee-Kelley, 2006). Lee-Kelley lists many barriers associated with virtual teams such as inappropriate leadership, unequal power and status, extended communication, accountability and responsibility, lack of face-to-face contact, low information or knowledge sharing, poor time management and technology infrastructure and reliability. This problem and the impacts of the project individuals on company progresses together with its solutions are seem to be a wide issue which requires a deep investigation hence can be a topic for another academic research. What this study, from its perspective the administration of the contract, can argue, relying on experiences of sector professionals is that; informing project personnel especially those at managerial level about the company regulations before employing them and keeping a continuous pressure on them during the project execution, and working with same project teams for several projects are major factors that might improve contractors abilities regarding the administration of the contract.

Table 3 displays the frequencies for impact rate of contract management for the success of a construction company in the international markets and frequencies for the rated weights of applications of contract management functions. In other words it compares the awareness with the application. It can be observed at the first glance that, although both the awareness and the application are rated to be of significance approximately at the same rates, the level of importance

sharply varies. Similar results were also revealed from the next two questions which were asked to sense the difference between awareness and applications.

Table 3 Comparison consideration on contract management with application of its functions

	Un-important	neutral	important	very important
the impact of contract management for the success of a construction company in the international markets	0	1	6	43
the weight given to relationship management in business practice	0	1	19	30
the weight given to project delivery in business practice	0	3	18	29
the weight given to administration of the contract in business practice	3	12	13	22

Respondents' personal perspectives and their companies' practices on contract management application.

In next two questions respondents were asked both to choose the best option that reflects their opinion and the best option that reflects their company's practice among four options which are contract management must be applied in every stage of cooperation (Continuous Application), must be applied in order to avoid problems in cooperation (Protective Application), must be applied when a problem arise in cooperation (Claim Management), and contract management is an inapplicable academic management theory. These different approaches to contract management application are demonstrated at figure 11. Especially the relation between the awareness rates of the two measures 'the impact consideration' and 'the application consideration' revealed a strong

relation with a gamma value of 0.850 as given in the SPSS Output 5 and 6, note that the (-) sign is due to reverse ordering.

SPSS Output 5 Cross tabulation of awareness measures

		Application Consideration		Total
		Continuous Application	Protective Application	
Impact Considera-tion	3	1	0	1
	4	2	4	6
	5	40	3	43
Total		43	7	50

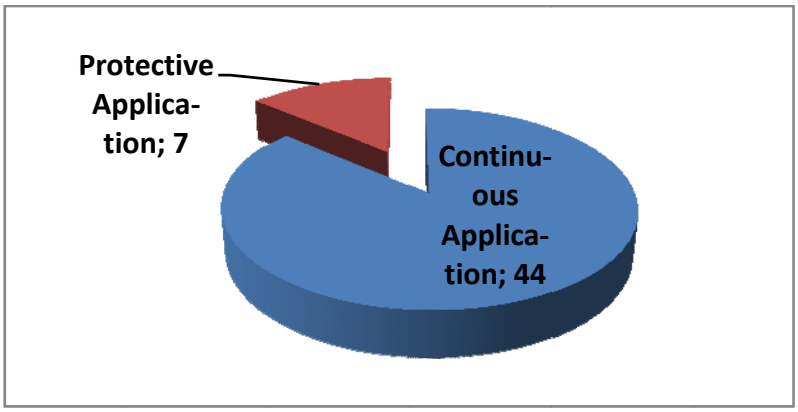
SPSS Output 6 Gamma value for awareness measures

		Value	Asymp. Std. Error(a)	Approx. T(b)	Approx. Sig.
Ordinal by Ordinal	Gamma	-.850	.116	-2.061	.039
N of Valid Cases		50			

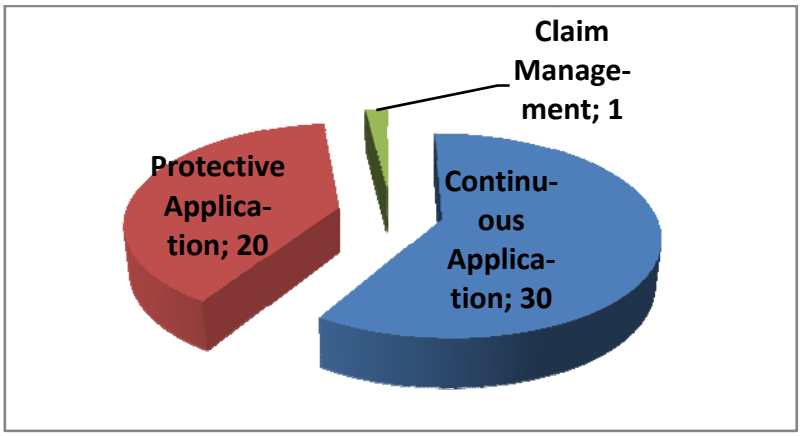
Graph 13 displays respondents' consideration on how a contract should be managed and graph 14 displays how their companies actually manage their contracts. 44 over 51 respondents considers that a continuous application is necessary, and remaining 7 believe a protective application needed. On the other hand 30 defined their companies' application as continuous, where 20 as protective and 1 as claim management. These figures presenting higher importance on awareness than the application indicates that the adaptation of Turkish contractors to contract management is still in progress and has not been matured yet. Considering this awareness as a driving factor for improvement in adaptation it can be estimated that in near future Turkish

contractors will be managing their contracts in more efficient, organized and systematic ways than they do today.

These awareness and application measures as “contract management approach” together with basic company profiles frequently cross tabulated with other data throughout the analysis in order to reveal their relations with them.



Graph 13 respondents’ consideration on how a contract should be managed



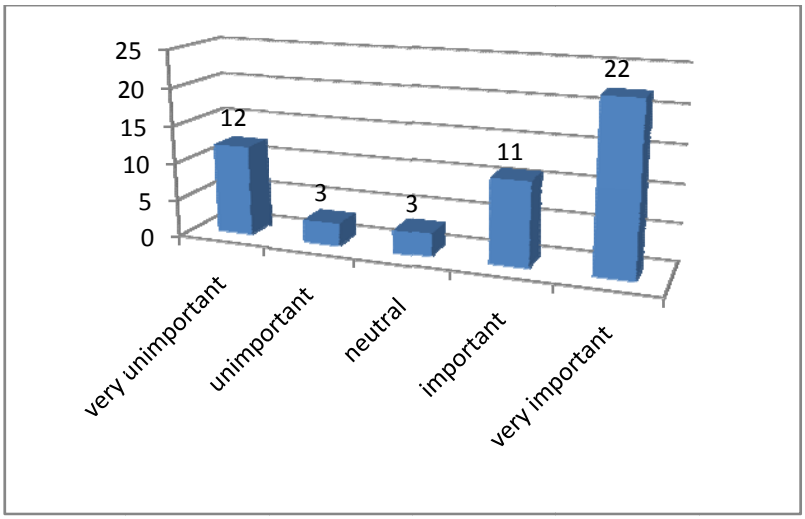
Graph 14 how companies manage their contracts

5.1.1. Factors Effecting Behavior

This section of the study tries to investigate the factors that might have an impact on companies' emphasis on contract management and attention to its application. In other words the factors that increase or decrease the contractors' willingness to adapt contract management investigated. Respondents were provided with features gathered from literature survey and asked to evaluate them in "1 very unimportant– 5 very important" scale. To prevent any ambiguity the participants were clearly informed to mark "very unimportant" if they apply the same quality of contract management regardless of that given factor.

The risk and complexity of the project

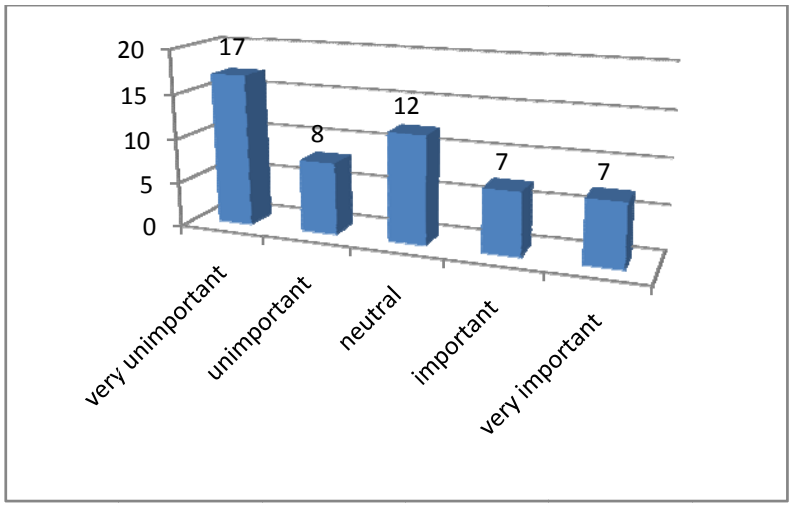
The first factor presented was the risk and complexity of the project. Risk and complexity of the projects are pointed as drivers of contractual problems by numerous researchers. Semple et al. (1994) associates them with the existence of great deal of conflict within the industry, Jaafari (2001) links them with uncertainties, Naoum (1994 cited in Ibbs et al., 2001) considers them as drivers of project change, and Abdul-Malak et al. (2002) suggests that the increased complexity of construction processes, documents, and conditions of contracts has been contributing to higher possibilities of disputes, conflicting interpretations, and adversarial attitudes. The responses on this factor as indicated in Graph 15 have a fragmented distribution. 12 of the contractors stated that they apply the same quality of contract management regardless the project risks and uncertainties, on the other hand 33 pointed that their behavior is impacted by them, and they give more emphasis on contract management as the project risk and complexity increase.



Graph 15 The impact of risk and complexity of the Project on contract management behavior

The duration of the project

Another factor thought to be has an effect on behavior was the duration of the projects. Shohet and Frydman, (2003) considers the desire to shorten the duration of the delivery process as well as the size of large projects as a source to project uncertainty, to which risks associate (Haddad, 2007). However only 14 of the contributors regard project duration as of importance. Some of those who consider that duration of the project impacts their behavior noted that as the durations shorten their attention in application increases as the packed work load raises the complexity. On the contrary other contributors who also consider that duration of the project impacts their behavior stated that their attention in application increases with the increase in project durations. These professionals noted that as the duration increase especially the documentation gains great significance and in addition possible project personnel circulations contribute to the necessity of having a comprehensive documentation.



Graph 16 The impact of Project duration on contract management behavior

It should be noted that the impact of project duration on contract management behavior has a substantial relation with the consideration on the application of contract management. The gamma value 0.559 (SPSS Output 7 and 8) implies that as respondents preferences shift through protective application, their consideration that project duration impacts behavior increases. It is difficult to comment on this relation. Differences of contract management applications was given in figure 11, and it was noted that protective application senses possible losses only after a detrimental event happens. Depending on this definition and considering that as the durations get shorten the complexity and thus the uncertainty might increase, it would be easier to comment on this relation. It can be concluded that those who prefer protective application in other words those who sense losses only after detrimental events, also prefer a more cautious contract management application with changing project duration due to its effects on risk distribution. Note that this still cannot explain the relation in between for those who regard duration as a factor, which impacts on behavior and considers so due to need of increased documentation in longer project durations.

SPSS Output 7 Cross tabulation of application consideration with the impact of duration on behavior

		the impact of project duration on contract management behavior					Total
		1	2	3	4	5	
Application Consideration	Continuous Application	17	7	10	4	6	44
	Protective Application	0	1	2	3	1	7
Total		17	8	12	7	7	51

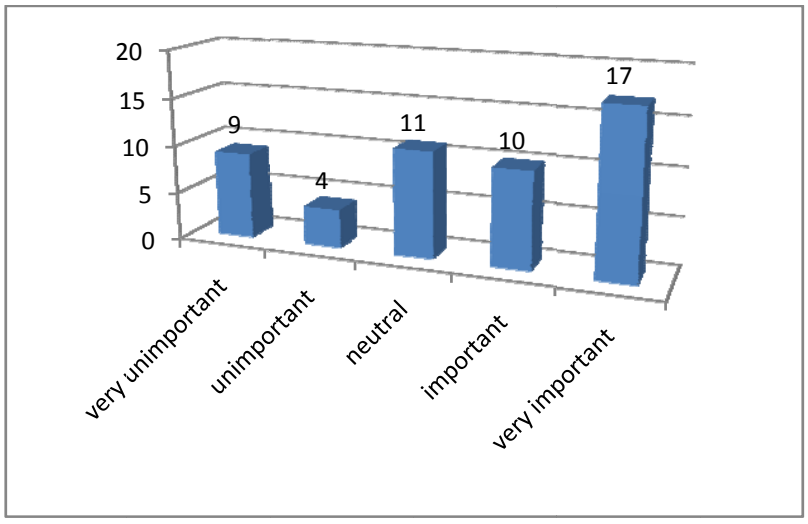
SPSS Output 8 Gamma value for cross tabulation of application consideration with the impact of duration on behavior

		Value	Asymp. Std. Error(a)	Approx. T(b)	Approx. Sig.
Ordinal by Ordinal	Gamma	.559	.161	2.351	.019
N of Valid Cases		51			

The country of the project or owner

The next factor introduced to participants was the country of the project or owner. Different countries have different laws and regulations, which are enforced at different levels. Individuals from different countries also have varying ethics and perceptions. Moreover every country has its own external environment and risks, by which the businesses are influenced. Lowe and Leiringer (2006), states: "all commercial organizations are exposed to and dependent to an external environment within which they operate, the most obvious being the influence of legal and regularity frameworks." So, is the contract management behavior of Turkish contractors varying accordingly with different working environments? The results are presented in Graph 17. The comparatively high influence can be observed. The 27 respondents who consider project or owner country to be of importance, mostly noted that this is

due to strict or loose enforcement of regulations at different countries. Respondents also mostly pointed that in some countries it is impossible to get in to a legal struggle with the owners, because the courts almost always make their decisions against the foreign contractors. In such environments as they complain all what can be done is to waive from contractual rights and to keep the owner happy. On the other hand, as stated by the contributors in some countries even the very minor issues may immediately be argued on legal basis. Respondents also referred other external factors, especially regarding the procurement and logistics. As it is stated, in some countries procurement and logistics might be problematic due to the reasons such as; lack of materials, the deficiency of country customs and regulations, and the lack of means of transportation. According to contractors these problems may impact many aspects of the projects, where they mostly cause delays and thus alter cash flows and conflict the parties. As a result respondents highlighted the growing importance of caution in preparation of project schedules, budgets, change procedures, and all relevant contractual arrangements in such countries.



Graph 17 The impact of project/owner country on contract management behavior

The crosstabs between contract management approaches and the impact of the country of the project or owner over contract management behavior revealed that those, who support a protective contract management application, with a substantial relation (SPSS Output 9 and 10), tend to change their behavior with the changing country. This not surprising; hence the protective application focuses on preventing from losses and not technically successful in preventing from detrimental events, the more care in risky countries, where detrimental events are supposed to happen more, is understandable.

SPSS Output 9 Cross tabulation of application consideration with the impact of owner/Project country on behavior

		the impact of the owner/Project country on contract management behavior					Total
		1	2	3	4	5	
Application Consideration	Continuous Application	9	4	10	8	13	44
	Protective Application	0	0	1	2	4	7
Total		9	4	11	10	17	51

SPSS Output 10 Gamma value for cross tabulation of application consideration with the impact of owner/Project country on behavior

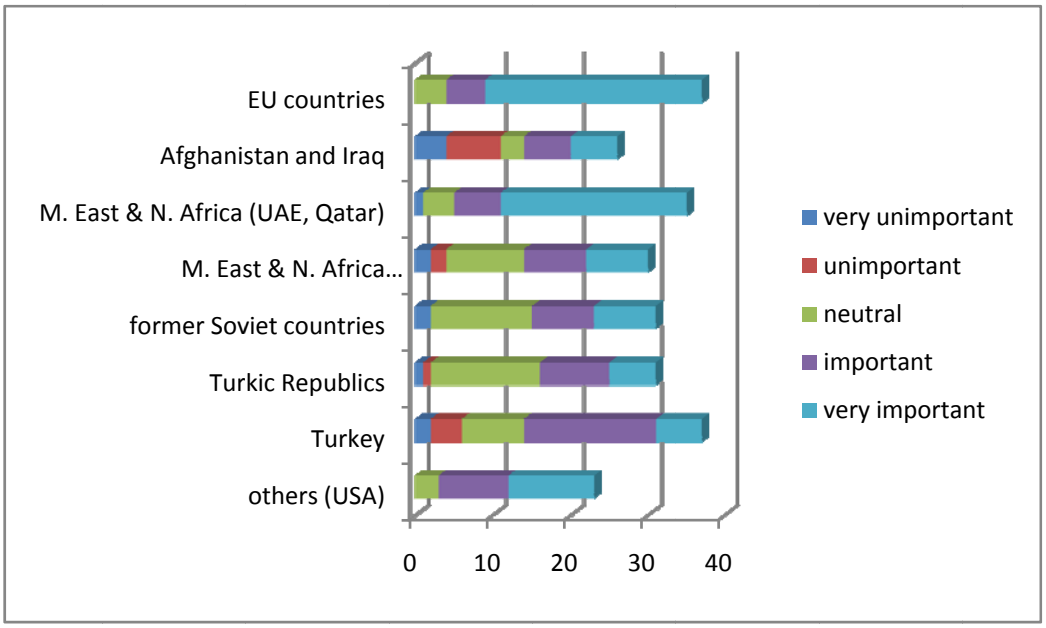
		Value	Asymp. Std. Error(a)	Approx. T(b)	Approx. Sig.
Ordinal by Ordinal	Gamma	.591	.202	2.194	.028
N of Valid Cases		51			

Moreover, participants, who replied in the above question that the country of the project or the owner are of importance in their contract management behavior, were provided the country groups for owners; EU countries,

Afghanistan and Iraq, which are subjected to an ongoing war, Middle East and North Africa countries like; UAE, Qatar, etc. where quit strict regulations are on application, Middle East and North Africa countries like Yemen, Libya, etc. where a comparatively more corrupted system and loose regulations exist, former Soviet countries excluding Turkic states, Turkic former soviet countries, Turkey, and others, which with a great majority replied by respondents for owners from USA. After clearly informing the participants to consider these as the owners' countries not project countries, they were asked evaluate companies' emphasis on contract management and attention to its application in "1 very unimportant – 5 very important" scale. It was clearly stressed to rate companies' emphasis on contract management and attention to its application not the country impact on them. The results are given at Table 4 and Graph 18.

Table 4 Companies' emphasis on contract management and attention to its application with the owner country

	very unimportant	unimportant	neutral	important	very important
EU countries	0	0	4	5	28
Afghanistan and Iraq	4	7	3	6	6
M. East & N. Africa countries (UAE, Qatar)	1	0	4	6	24
M. East & N. Africa countries (Yemen, Libya)	2	2	10	8	8
former Soviet countries	2	0	13	8	8
Turkic Republics	1	1	14	9	6
Turkey	2	4	8	17	6
Others (USA)	0	0	3	9	11



Graph 18 Companies' emphasis on contract management and attention to its application with the owner country

The country index is calculated for the Companies' emphasis on contract management and attention to its application as shown in Table 5. This index indicates that those contractors, who affirmed that the country of the project or the owner are of importance in their contract management behavior, more care and more sensitive on contract management when they are working with owners from countries, where rules are regulations are strictly enforced like EU countries, Middle East and North Africa countries like; UAE, Qatar, and USA. It should be noted that the "others" option with a great majority attracted USA based owners, which the contractors worked together in different countries. On the contrary Afghanistan and Iraq, where currently a war is going on, are the countries of the owners, where these contractors do not pay that much attention on contract management. It is bitter that Turkey with its company rate 64.2% is the second lowest rated country following Afghanistan and Iraq. This might be a trauma that originated and remain from their early days, when they were working for Turkish public organizations, who are unquestionable and decisive.

Table 5 Country index for the Companies' emphasis on contract management and attention to its application

Country	Index
EU countries	91.2
M. East & N. Africa countries (UAE, Qatar)	87.1
Others (USA)	83.7
former Soviet countries	66.1
M. East & N. Africa countries (Yemen, Libya)	65.0
Turkic Republics	64.5
Turkey	64.2
Afghanistan and Iraq	52.9

Cross tabulations revealed further results. Those results that a meaning could be attributed are as follows. The importance given to contract management while working with owners from EU countries increases with the contractors increased experience in international markets (Gamma value; 0.680), which may be referred to adaptation to contract management. The contractors, those believe that the contract management impact a company's success more, also sensitive in contract management more when they work with owners from EU countries (Gamma value; 0.903), USA (Gamma value; 0.692) and Turkey (Gamma value; 0.514). For owners from EU countries and USA this result also may be referred to adaptation to contract management, however considering its low country index it is conflicting with such comment for Turkey. Increased weight given to relationship management function of contact management has a relation with sensitivity in contract management for projects with owners from EU countries (Gamma value; 0.747) and Turkey (Gamma value; 0.629). For both countries; this might be explained by Turkish contractors' culture and their belief that with obtaining a formal and as well a close relation, the shortcomings of other two functions can still be defeated. A question, which initially seems reasonable, is why this does not reflect to other countries? Without being able

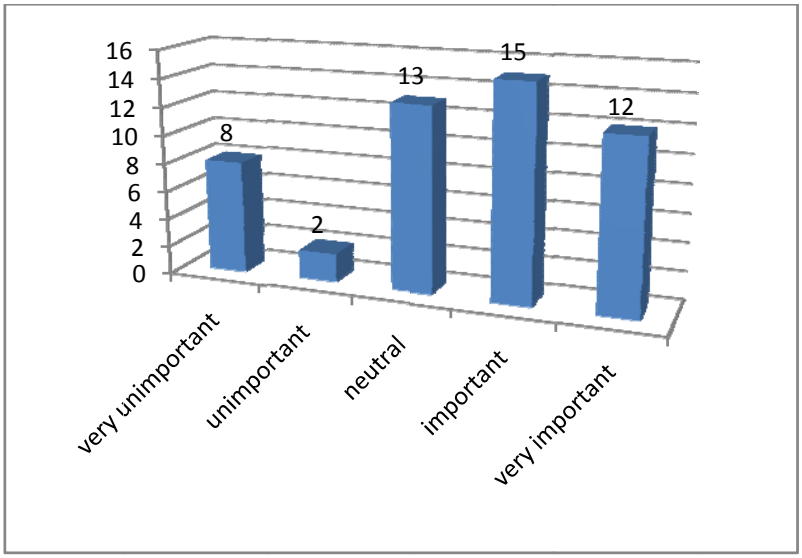
to remove all doubt it should be noted that several respondents noted during interviews that in some countries, especially in Middle East and North Africa countries, where owners are dominant and supported by laws; as well as demanding on contractual rights, having close relations with the owners also does not make too much sense, because the owners are very well aware of their positions and their behaviors rely on this position more than anything else. Another result revealed by cross tabulation is that the respondents who support continuous contract management have an increased sensitivity in contract management for projects with owners from EU countries (Gamma value; 0.827), which is quit conflicting with the perspective of contract management application as a philosophy, but perhaps still can be explained with the gap between awareness and application. Opposite to this relation with owners from EU countries, respondents who support protective contract management application have an increased sensitivity in contract management for projects with owners from former soviet countries (Gamma value; 0.884), Afghanistan and Iraq (Gamma value; 0.644), and Middle East and North Africa countries like Yemen, Libya (Gamma value; 0.633). As previously mentioned protective application senses possible losses only after a detrimental event happens. It might be that the supporters of protective application expect more unfavorable events with the owners from these countries. Unfortunately, the data and the knowledge gathered from contributors however fail to explain this relation for former soviet countries. Excluding former soviet countries, the respondents frequently complain about the payment problems raised by the owners from these countries. Also procurement and logistics problems related to the owners from these countries mentioned. The author of this thesis witnessed such problems in his professional experience in Libya. The owner was continuously failing in fulfilling his liabilities to do regular payments, supply materials and supply permissions for imported materials. The SPSS Outputs for these cross tabulations are not presented here in order to not to disturb the text body with so many consecutively tables. The brief results can be observed from Table 6, which assembles all.

Table 6 Cross tabulations of the importance given to contract management while working with owners from different countries

The contractors experience in international markets	Sensitivity on contract management while working with owners from EU countries	0.680	Substan-tial Relation
The contractors consideration that the contract management impact a company's success	Sensitivity on contract management while working with owners from EU countries	0.903	Strong Relation
The contractors consideration that the contract management impact a company's success	Sensitivity on contract management while working with owners from USA	0.692	Substan-tial Relation
The contractors consideration that the contract management impact a company's success	Sensitivity on contract management while working with owners from Turkey	0.514	Substan-tial Relation
Weight given to relationship management function of contact management	Sensitivity on contract management while working with owners from EU countries	0.747	Strong Relation
Weight given to relationship management function of contact management	Sensitivity on contract management while working with owners from Turkey	0.629	Substan-tial Relation
Supporting continuous contract management application	Sensitivity on contract management while working with owners from EU countries	0.827	Strong Relation
Supporting protective contract management application	Sensitivity on contract management while working with owners from former soviet countries	0.884	Strong Relation
Supporting protective contract management application	Sensitivity on contract management while working with owners from Afghanistan and Iraq	0.644	Substan-tial Relation
Supporting protective contract management application	Sensitivity on contract management while working with owners from Middle East and North Africa countries like Yemen, Libya	0.633	Substan-tial Relation

The relation with the owner

Another factor introduced to participants is the nature of the relation with the owner. Zaghloul (2005) referring works of Jeffries and reed (2000) and Gulati (1995), points that trust results in closer business relationships with less need for detailed contracts and contracting parties who already trust each other find it easier to handle risks and uncertainties informally, therefore to a certain degree, organizations appear to substitude a certain level of trust for contractual documents in their repeated contractual business relationships. Participants were asked whether their contract management behavior changes with the content of the relation in between or not, and requested to rate the impact of relation on their emphasis on contract management and attention to its application, as the relation changes from more formal to less formal. The results are presented in Graph 19.

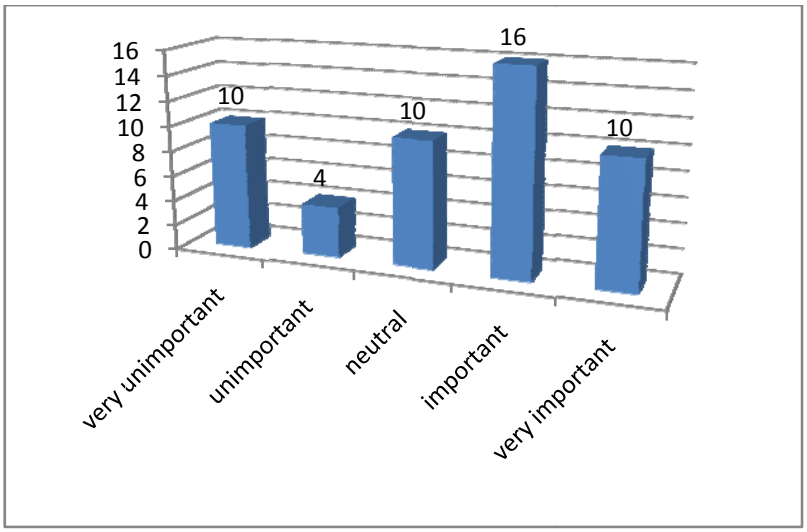


Graph 19 The impact of project/owner country on contract management behavior

In previous sections of the study, the significance of the relation for Turkish contractors in the project environment was given together with its possible two explanations hence will not be repeated here. Nevertheless the 27 responses indicating that the contract management behavior is arranged considerably with the level of relation, against 8 responses indicating there is no change in its quality, clearly shows that Turkish contractors not only endeavor for keeping good relations but also rely too much on them. This however, different than keeping good relations, has both positive and negative consequences. Such a dependence on good relations and thus loosing contract management applications like contractual procedures might in return cause lose of contractual rights as well as it might lead a quick and straightforward progress.

The owner type

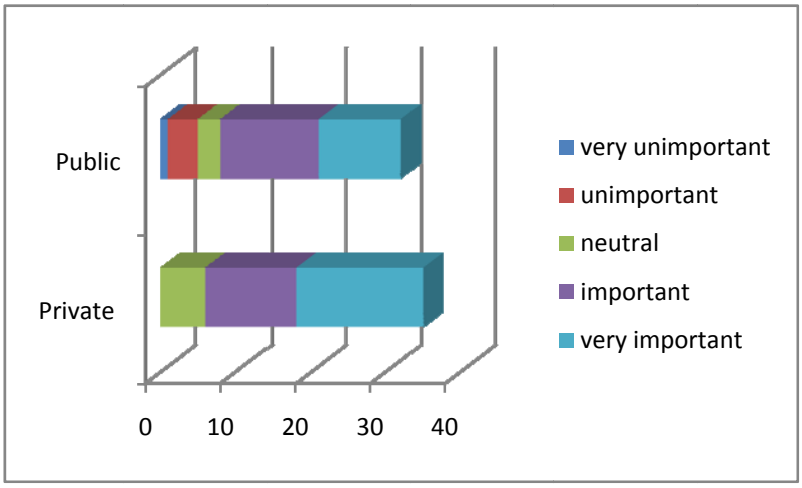
One more factor regarding the owners and their impacts on sensitivity to contract management behavior of contractors is the owner type. Contractors were asked to evaluate the public and private owners. The results are presented at Graph 20. 26 of respondents consider that the owner type has a significance influence on their contract management behavior. These respondents however mostly underlined that more than the owner type; the owner country is still dominant on the direction of the change of their behavior. They pointed that even the attitudes of private owners does not vary too much with the country, the attitudes of public owners vary drastically. The public owners called to be changing from candid to very strict, from helpful to very uncooperative, or from friendly to very formal as the countries change. On the other hand respondents commonly consider private owners to be relatively parallel independent from the country. Thus the respondents noted that while they have an almost stable level of contract management independent from the countries of the private owners, they perform a relatively more or less comprehensive behavior against public owners from different countries.



Graph 20 The impact of owner type on contract management behavior

Table 7 Companies' emphasis on contract management and attention to its application with the owner type

	very unimportant	unimportant	neutral	important	very important
Public	1	4	3	13	11
Private	0	0	6	12	17



Graph 21 Companies' emphasis on contract management and attention to its application with the owner type

Moreover, participants, who arrange their contract management application accordingly with the changing owner type were asked to rate their applications for different owner types. The results are given at Table 7 and Graph 21. The more fragmented distribution for public owners is overlapping with what was noted in previous paragraph: "Respondents stated that while they have an almost stable level of contract management independent from the countries of the private owners, they perform a relatively more or less comprehensive behavior in public projects at different countries." As the results displays the contractors perform a more comprehensive contract management while they are working with private owners. One of the reasons provided by respondents is that while they are working with private owners they have to challenge more against the business consideration. The other party is focused on the economical success more than anything else and the representatives are much specialized on chasing their contractual rights. They are also well aware of business tricks. As respondents stated the contract preparation thus execution requires much more attention with private owners because different than more standard contracts of public bodies, the contracts with private parties are much variable and depends on the ability of the parties to consolidate their positions against the hard bargain of professionals who are doing well in business tricks. Another issue underlined by the respondents is the reliance on the private owner. Public bodies, besides their all questionable attributes, are still found to be stable, where for a private owner the continuity of business success thus the economical capability to support project is more questionable. With such risks attached to private owners it is not surprising that once again with a moderate relationship those respondents who believe that contract management should be applied for protection has an increased emphasis on contract management application with a gamma value of 0.560 as given in SPSS outputs 11 and 12.

SPSS Output 11 Cross tabulation of application consideration with the emphasis on contract management behavior for private projects

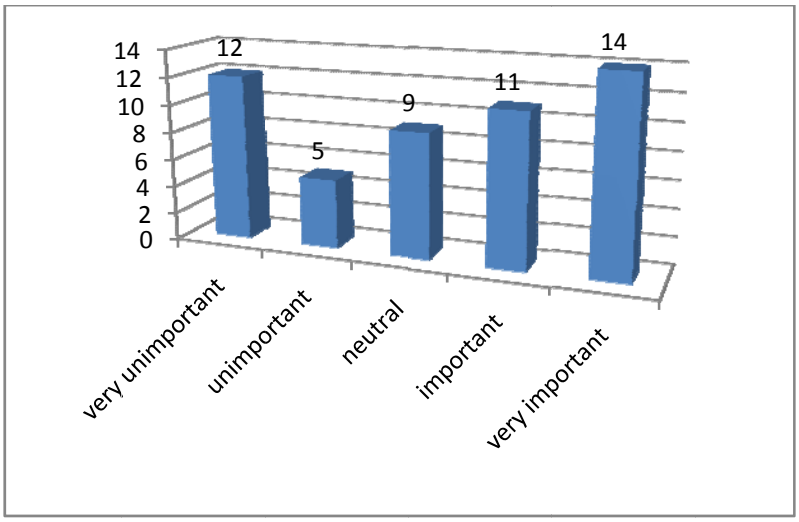
		the emphasis on contract management behavior for private projects			Total
		3	4	5	
Application Consideration	Continuous Application	5	12	12	29
	Protective Application	1	0	5	6
Total		6	12	17	35

SPSS Output 12 Gamma value for Cross tabulation of application consideration with the emphasis on contract management behavior for private projects

		Value	Asymp. Std. Error(a)	Approx. T(b)	Approx. Sig.
Ordinal by Ordinal	Gamma	.560	.383	1.390	.164
N of Valid Cases		35			

The contract type

The contract type also thought to be a potential factor which influences contract management behavior. The choice of contract type is one of the most important decisions in any contract strategy because it governs three vital success factors which are; the method of payment for the contractor, the risk allocation between the parties, and its ability to motivate the contractor (Zaghloul, 2005). As smith (2003) states fixed price contracts like, lump sum and unit price contracts, allocate more risk to the contractor, where cost reimbursable contracts provide greater risk sharing between the parties. The participants were asked to rate the impact of contract types on their contract management behavior in order to reveal whether this different risk sharing of different payment methods has an influence on their behavior.



Graph 22 The impact of contract type on contract management behavior

Graph 22 presents that 11 of respondents rate the impact of contract type as important and 14 as very important. These respondents, together with varying risks allocation of payment methods, pointed varying documentation requirements for preparation of payment certificates in different contract types to justify their changing behavior. The cross tabulations exposed that the respondents those support protective contract management and those companies applying protective contract management or claim management have substantial and moderate relations respectively with the increase in behavior modifications. This is related with the defensive nature of protective application. SPSS outputs 13. 14, 15, and 16 illustrates these relations.

SPSS Output 13 Cross tabulation of application consideration with the impact of the contract type on contract management behavior

		the impact of the contract type on contract management behavior					Total
		1	2	3	4	5	
Application Consideration	Continuous Application	12	5	9	8	10	44
	Protective Application	0	0	0	3	4	7
Total		12	5	9	11	14	51

SPSS Output 14 Gamma value for cross tabulation of application consideration with the impact of the contract type on contract management behavior

		Value	Asymp. Std. Error(a)	Approx. T(b)	Approx. Sig.
Ordinal by Ordinal	Gamma	.754	.131	2.830	.005
N of Valid Cases		51			

SPSS Output 15 Cross tabulation of actual application with the impact of the contract type on contract management behavior

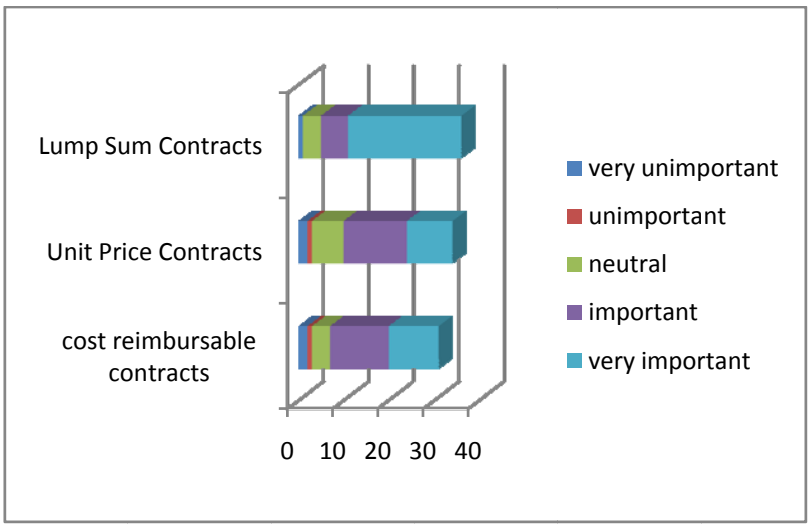
		the impact of the contract type on contract management behavior					Total
		1	2	3	4	5	
Actual Application	Continuous Application	11	4	6	4	5	30
	Protective Application	1	1	3	7	8	20
	Claim Management	0	0	0	0	1	1
Total		12	5	9	11	14	51

SPSS Output 16 Gamma value for cross tabulation of actual application with the impact of the contract type on contract management behavior

		Value	Asymp. Std. Error(a)	Approx. T(b)	Approx. Sig.
Ordinal by Ordinal	Gamma	.642	.134	4.041	.000
N of Valid Cases		51			

Table 8 Companies' emphasis on contract management and attention to its application with the contract type

	very un-important	Un-important	neutral	important	very important
Lump Sum Contracts	1	0	4	6	25
Unit Price Contracts	2	1	7	14	10
cost reimbursable contracts	2	1	4	13	11

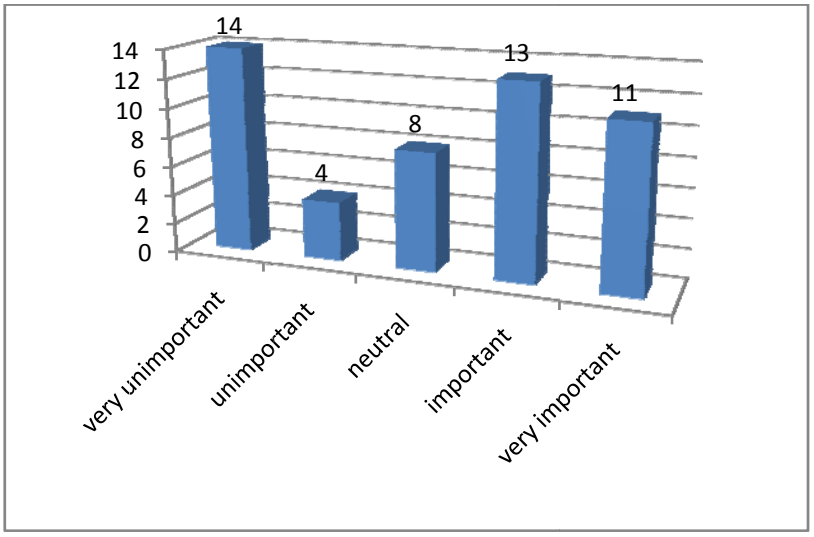


Graph 23 Companies' emphasis on contract management and attention to its application with the contract type

Table 8 and Graph 23 present the results for the respondents, ratings on their applications for different contract types. These respondents, whose companies exhibit varying contract management behavior with changing contract type, mostly rated lump sum contracts as the contract type, in application of which they behave more sensitive. Considering that the lump sum contracts, among all contract types, are the contracts which most expose risk to the contractor, this result is self explanatory.

The project delivery method

The delivery methods also presented to participants to investigate its effect on weight given to the contract management. Different delivery methods bring differing responsibilities and liabilities, and financing measures thus differing risks. Results for this factor are given at Graph 24. 14 contractors indicated that their behavior is not impacted hence they apply the same quality of contract management regardless the project delivery, however 24 replied that their behavior change significantly.



Graph 24 The impact of delivery method on contract management behavior

When several cross tabulations run the defensive nature of protective application proved itself once again. The cross tabulations exposed that the respondents those support protective contract management and those companies applying protective contract management or claim management have substantial and moderate relations respectively with the increase in impact of this factor just as they have with the previous factor. SPSS outputs 17. 18, 19, and 20 illustrates these relations.

SPSS Output 17 Cross tabulation of application consideration with the impact of the project delivery type on contract management behavior

		the impact of the Project delivery type on contract management behavior					Total
		1	2	3	4	5	
Application Consideration	Continuous Application	14	4	7	11	7	43
	Protective Application	0	0	1	2	4	7
Total		14	4	8	13	11	50

SPSS Output 18 Gamma value for cross tabulation of application consideration with the impact of the project delivery type on contract management behavior

		Value	Asymp. Std. Error(a)	Approx. T(b)	Approx. Sig.
Ordinal by Ordinal	Gamma	.738	.153	2.673	.008
N of Valid Cases		50			

SPSS Output 19 Cross tabulation of actual application with the impact of the project delivery type on contract management behavior

		the impact of the Project delivery type on contract management behavior					Total
		1	2	3	4	5	
Actual Application	Continuous Application	13	2	4	8	2	29
	Protective Application	1	2	4	5	8	20
	Claim Management	0	0	0	0	1	1
Total		14	4	8	13	11	50

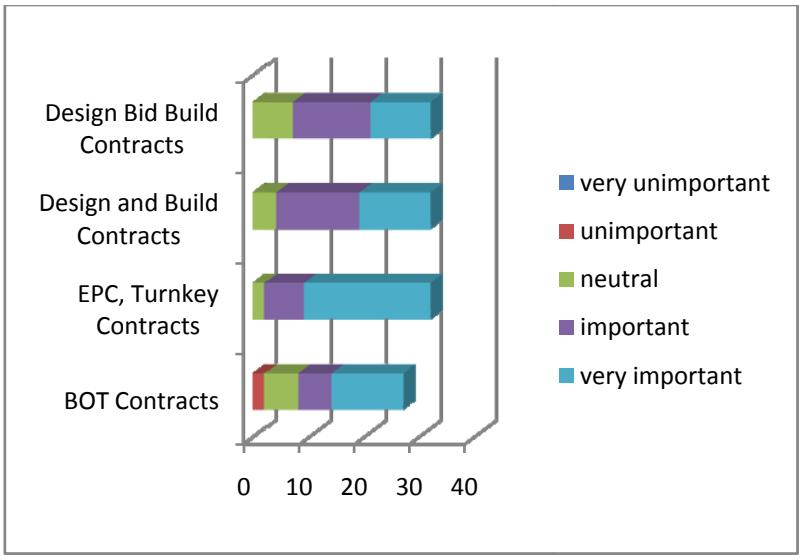
SPSS Output 20 Gamma value for cross tabulation of actual application with the impact of the project delivery type on contract management behavior

		Value	Asymp. Std. Error(a)	Approx. T(b)	Approx. Sig.
Ordinal by Ordinal	Gamma	.645	.131	4.220	.000
N of Valid Cases		50			

Respondents who denoted that project delivery methods has an impact on their emphasis to contract management and its application were further rated their contract management emphasis for different project delivery methods. Results are presented at Table 9 and Graph 25. Also Table 10 displays project delivery method indexes for the Companies' emphasis on contract management and attention to its application. It is understandable and clear on this visual material that excluding BOT contracts, the importance given to contract management decreases as the responsibilities on contractors decreases through EPC and turnkey contracts to only traditional construction contracts. The result for BOT contracts is arguable. It would be helpful to note that several respondents considered BOT projects as flexible for contractors, because financial measures and return of the project is contractors' concern.

Table 9 Companies' emphasis on contract management and attention to its application with the Project delivery method

	unimportant	neutral	important	very important
Design Bid Build Contracts	0	7	14	11
Design and Build Contracts	0	4	15	13
EPC, Turnkey Contracts	0	2	7	23
BOT Contracts	2	6	6	13



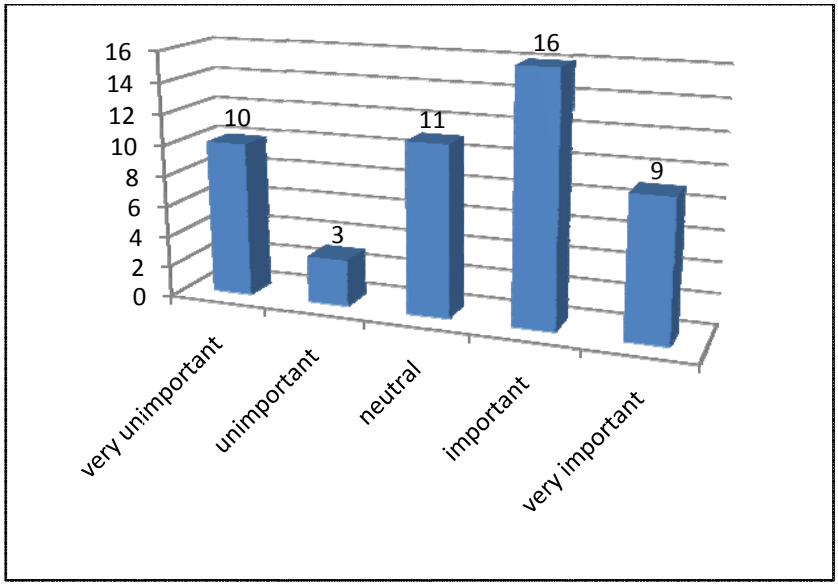
Graph 25 Companies' emphasis on contract management and attention to its application with the Project delivery method

Table 10 Project delivery method index for the Companies' emphasis on contract management and attention to its application

Project Delivery Method	Index
EPC, Turnkey Contracts	91.4
Design and Build Contracts	82.0
Design Bid Build Contracts	78.1
BOT Contracts	77.8

Nationalities of the project partners

As the last factor that might affect the behavior, contractors were asked whether working with partners from different nations impact their behavior. This has two dimensions. First partners with a project management culture that highly adapted to contract management might push the contractors to adapt as well. Second partners with a reverse project management culture perhaps causing gaps in contract management application, might push the contractor to work with a greater emphasis to fill the gaps. The results demonstrated at Graph 26 shows that working with partners from different nations thus differing cultures can considerably impact the behavior.



Graph 26 The impact of delivery method on contract management behavior

Comparison of factors influencing behavior

This section of the thesis focused on the factors that might have a control on Turkish contractors' contract management behavior, by altering their emphasis on contract management and their attention on its application. Several factors investigated deeply within themselves. The last question of this section is:

"When compared, which ones of these factors, all have some interaction with behavior, have a relatively dominating impact?" In order to answer question factor indexes for the companies' emphasis on contract management and attention to its application are calculated. Table 11 lists these indexes. When all factors evaluated together the indexes reveal that risk/complexity of the project, and the three owner related factors; country of the project or country of the owner, relations with the owner and type of the owner are the factors that has the most influence on the behavior.

Table 11 Factor index for the Companies' emphasis on contract management and attention to its application

Factor	Index
Risk/complexity of the project	63.7
Country of the project or owner	60.8
Relations with the owner	60.5
Type of owner	56.0
Nationalities of the project partners	55.6
Contract type	54.9
Delivery Method	51.5
Duration of the project	39.7

Table 12 lists strong and substantial relations between the factors impacting contract management. In other words likeliness of contractors those pick one factor to pick another too. The only strong relation is between contract type and delivery method. Different delivery methods as they allocate liabilities require unlike contracts. It is quite understandable that variations in contracts, responsibilities, payment methods, and embedded risk variations draw attention of contractors. Delivery methods and contract types also have relations with project duration. Increases at the amount of the responsibilities, especially undertaking the design of the project in an environment where the desire to shorten the project duration grows every day, make time a crucial

factor. Duration of the project is also one of the variables in the determination of cash flows, of which one other important variable is the contract type. There are also relations between all owner related factors. Noting that, following risk/complexity of the project these three owner related factors are the factors that has the most influence on the behavior, it is not surprising that there also exist relations between them. In fact the existence of these relations referred frequently while all these factors were investigated individually. It can be reminded that respondents consider that the relations with the owners vary with the country and owner types and especially public bodies' approaches vary dramatically with the countries.

Table 12 Cross tabulations of the factors influencing behavior.

Factors		**Gamma**	**Relation**
Contract type	Delivery Method	0.754	Strong
Country of the project or owner	Relations with the owner	0.691	Substantial
Duration of the project	Delivery Method	0.618	Substantial
Country of the project or owner	Type of owner	0.607	Substantial
Duration of the project	Contract type	0.600	Substantial
Relations with the owner	Type of owner	0.600	Substantial
Relations with the owner	Contract type	0.563	Substantial
Type of owner	Delivery Method	0.563	Substantial
Country of the project or owner	Delivery Method	0.558	Substantial
Relations with the owner	Delivery Method	0.531	Substantial
Duration of the project	Relations with the owner	0.519	Substantial
Country of the project or owner	Nationalities of the project partners	0.517	Substantial
Duration of the project	Country of the project or owner	0.512	Substantial
Type of owner	Contract type	0.500	Substantial

5.1.2. Key Factors for Success

This section of the study focuses on the factors or in other words the strategies that the Turkish contractors find to be helpful or significant for contract management. As it was given in the questions design section through literature survey and commercial documents, the strategies or practices that cited as effective are chosen and listed under five different processes of contract management, which are; per-tender, pre-contract, regular contract (construction), claim, and dispute processes.

The right time to take actions

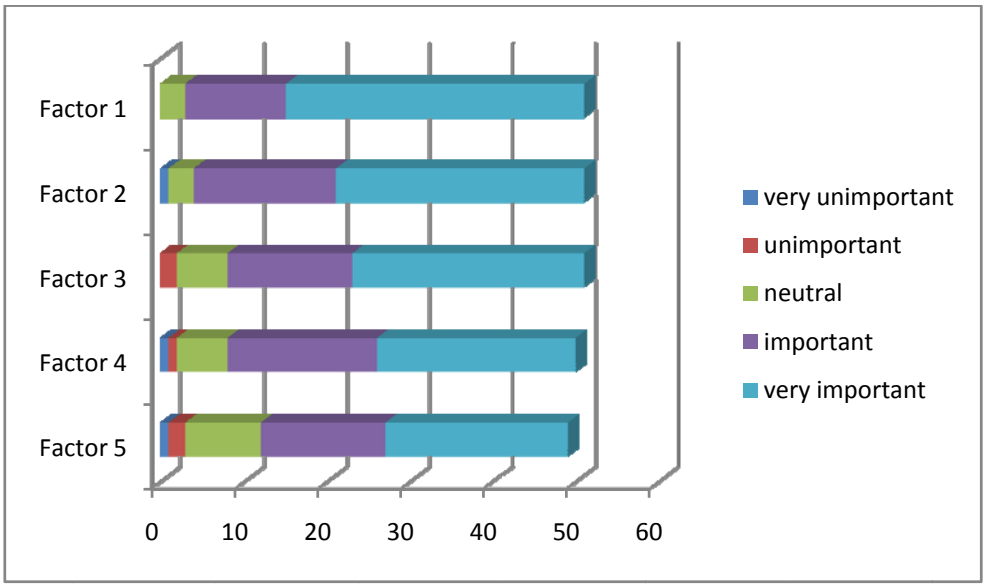
As well as taking the right actions, taking it at the right time is important. Thus the contractors also were asked to evaluate the impact of the processes in contract management success, considering the right strategies applied during each stage. Table 13 represents the indexes of the periods, as a factor when the successful contract management is found to be more effective and beneficial. According to sector professionals actions taken during the regular contract process has the biggest impact on success. Several respondents that rated this process as most important noted that the actions taken during this process not only preserve from the occurrence of claims and disputes, but also arrange and overcome unfavorable circumstances raised due to inevitable mistakes done during pre-tender and pre-contract processes. Never the less the respondents rated pre-tender and pre-contract processes most, indicated that any defects in contract management actions at these stages would ultimately affect further stages so these two are most important processes. Pre-tender and pre-contract processes were rated second and third respectively. Moreover most of the participants thought these three processes to be significant for overall success of the project, while claim and dispute processes however considered being significant only when potential losses are of issue. Having this perspective it is not surprising that these two processes rated least. The responses of the contractors can be found at Table 14 and Graph 27.

Table 13 Strategic weight indexes for contract management processes

Process	Index	Rank
Regular Contract Process	91.2	Factor 1
Pre-tender Process	86.8	Factor 2
Pre-Contract Process	83.8	Factor 3
Claim Process	81.5	Factor 4
Dispute Process	78.1	Factor 5

Table 14 Strategic weights of contract management process

	very un-important	un-important	neutral	important	very important
Factor 1	0	0	3	12	36
Factor 2	1	0	3	17	30
Factor 3	0	2	6	15	28
Factor 4	1	1	6	18	24
Factor 5	1	2	9	15	22



Graph 27 Strategic weights of contract management process

Several cross tabulations were run for strategic weights of contract management processes as shown in Table 15 and Table 16. It can be viewed that as the contractors rate claim process to be significant more they also rate the dispute process more. Also those companies who rate these two processes more are the companies that employ contract managers at their project sites. This might be due to the trust on the control of the contract. With such a control they might be called to be much ready to defend their contractual rights. Those contractors having contract managers at site also give more weight to actions during pre-contract process. Considering that this process is the period where the parties bargain to settle their positions, this relation may be referred as the desire to strengthen their control on contract. The weight given to pre-contract process also increases among the contractors who consider dispute process is significant. Together with that bargains to settle positions are held in this stage, the means and methods for settlement of disputes are also determined during this process. These might be the reasons for such a relation. A strong relation exists between the pre-tender and regular contract processes. Pre-tender process is the period that the contractors study their works. Any shortages during this study will eventually impact the regular contract management stage. Therefore it is understandable that respondents consider these two processes together. It should also be noted that as the belief for "contract management has an impact on company success in international markets" increases the weight given to regular contract period increases. Considering that regular contract period is rated most among the other processes such a relation is not surprising.

Table 15 Cross tabulations within strategic weights of contract management process

Factors		Gamma	Relation
Factor 4	Factor 5	0.952	Strong Relation
Factor 1	Factor 2	0.790	Strong Relation
Factor 3	Factor 5	0.552	Substantial Relation

Table 16 Cross tabulations for strategic weights of contract management process

Factors		Gamma	Relation
Having contract managers at sites	Factor 4	0.810	Strong Relation
Having contract managers at sites	Factor 5	0.683	Substantial Relation
Having contract managers at sites	Factor 3	0.617	Substantial Relation
Impact of contract management on success	Factor 1	0.525	Substantial Relation

5.1.2.1. Pre-tender Process

Under the heading of pre-tender process the respondents were given items regarding the choice of owners and projects, comprehensive studies of tender documents, and general risks. One strategy might be working with owners that a long time relationship and a mutual trust exist. The importance of relation and trust were mentioned several times at this thesis so will not be repeated here. Another strategy might be working with identical owners or countries or at identical projects. This increases the control over the project while reducing risks. The contractors become familiar with contracts and spesifications, procurement and logistics, suppliers and subcontractors, country conditions, and the teams become more experienced and specialized. Complete and comprehensive examination of tender documents and evaluation of all

perspectives of the project at different departments are also introduced as two strategies. As previously mentioned any shortages during this period will eventually affect the rest of the project. Moreover determination of potential risks listed as the last item. At this point the contractors were clearly explained to consider overall risks like country conditions or laws and regulations, market properties etc. rather together with project specific risks traced at the tender documents. According to Zaghloul (2005) to many contractors, risk management is in the nature of their business and that is what they are paid to do however contractor's exposure to risk must be related to the return that they can reasonably expect from a project. Table 17 lists the indexes for pre-tender process strategies as key factors for success. Complete and comprehensive examination of tender documents rated most by the survey contributors. However many contributors also noted that even they are aware of this fact they still cannot examine all tender documents completely and comprehensively. As the major constraint the sizes of tendering teams were blamed. Respondents stated that as they can win only the minority of the bids that they participated, it would not be logical and economical to increase team sizes. Several respondents also complained about the tendering durations. These respondents stated that with limited durations and teams their ability for complete and comprehensive studies is restricted. A little of contributors on the contrary claimed that even an infinite period was given to the contractors for their preparation to bids, it still would not change the lack of time for preparation, as the number of projects would continuously increase while the team sizes stay constant. When these respondents, who confessed that they cannot completely and comprehensively study the tender documents, asked about the weight among the tender documents; almost all noted that the more weight is given to technical documents not to administrative documents. The most weight is given on 'bills of quantities' in order to be able to estimate precise bid price. Following examination of documents determination of risks and the aspects of relations listed as more important strategies. The contribution of different departments rated fourth. The workloads and team sizes of the relevant departments like

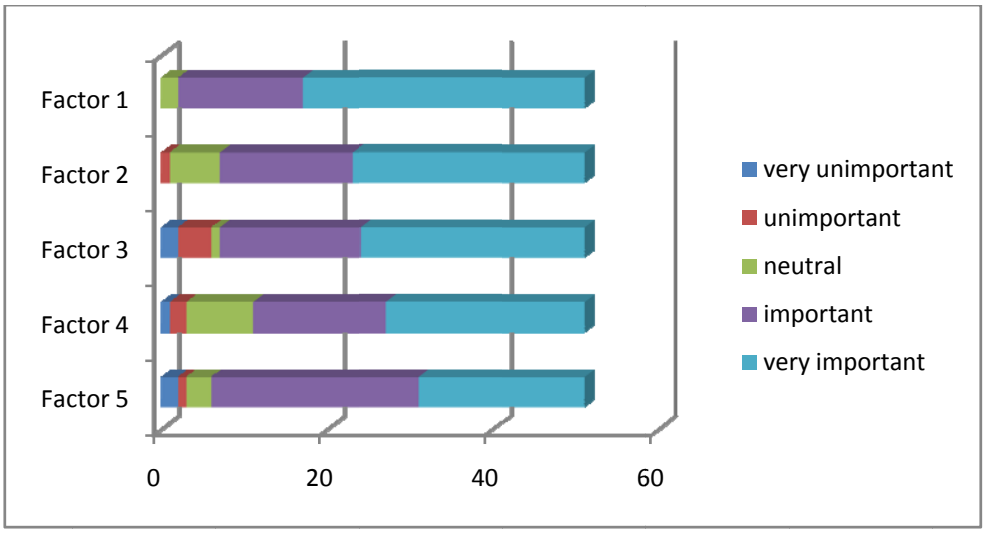
human resources and finance departments together with increased complexity in inter-departments communication were presented as excuses. Working with identical owners or countries or at identical projects rated least. Several respondents mentioned that this is related with company vision. For those companies who try to receive as many projects as they can as growth strategy this item did not attract too much attention. Responses for pre-tender strategies are listed in Table 18 and Graph 28.

Table 17 Indexes for pre-tender process strategies

Strategy	Index	Rank
Complete and comprehensive examination of tender documents	90.7	Factor 1
Determination of potential risks	84.8	Factor 2
Working with owners that a long time relationship and a mutual trust exists	80.9	Factor 3
Evaluation of all perspectives of the project at different departments	79.4	Factor 4
Working with identical owners or countries or at identical projects	79.4	Factor 5

Table 18 Importance of pre-tender process strategies

	very un-important	un-important	neutral	important	very important
Factor 1	0	0	2	15	34
Factor 2	0	1	6	16	28
Factor 3	2	4	1	17	27
Factor 4	1	2	8	16	24
Factor 5	2	1	3	25	20



Graph 28 Importance of pre-tender process strategies

Several relations revealed by the cross tabulations are listed at Table 19 and Table 20. Some thought to have a specific importance summarized as follows. It can be viewed that the contractors value choosing owners already there exist a relation in between as a strategy are also value working with identical owners or countries or at identical projects as a strategy. This is an overlap that shows the contractors who care more or declare preferences about which bid to go even before they consider receiving tender documents. The two strategies regarding the evaluation of tender documents are also related within. As the contractors' attention for a comprehensive study of documents increases their consideration for the need of different departments' contribution also increases. This is an overlap that shows the contractors who concern more about the evaluation of tender documents. Both of these two strategies also have a relation with increased belief on the impact of contract management on success of a company. In other words those, who considers contract management has an effect on company success, more care about these two strategies. Moreover those contractors who value risk determination as a strategy at this stage of the project also value the comprehensive evaluation of tender documents. As the risks are embedded in the tender documents this is self explanatory. The weight

given to comprehensive evaluation of documents has also reduces the behavior shifts with the changing risk and complexity of the project. This is perhaps due to that the contractors as they reveal the risks of the project through former studies they execute their contract management independent from the changing risks and complexity. One more point to note is that those respondents who consider continuous contract management application as a project management philosophy find the evaluation of all perspectives of the project at different departments of significance. However those respondents who support protective contract management application find Working with identical owners or countries or at identical projects. The desire of this view to stay far from any uncertainties and risks was mentioned several times and will not be repeated here again. This view presents a good comparison for perspectives and perceptions of two different approaches.

Table 19 Cross tabulation within pre-tender process strategies

Factors		**Gamma**	**Relation**
Factor 3	Factor 5	0.833	Strong Relation
Factor 1	Factor 4	0.691	Substantial Relation
Factor 1	Factor 2	0.560	Substantial Relation

Table 20 Cross tabulations for pre-tender process strategies

Factors		Gamma	Relation
Impact of contract management on success	Factor 1	0.801	Strong Relation
Continuous contract management application consideration	Factor 4	0.715	Strong Relation
Protective contract management application consideration	Factor 5	0.679	Substantial Relation
Impact of contract management on success	Factor 4	0.651	Substantial Relation
Impact of contract management on success	Factor 5	-0.626	Substantial Relation
Size of the company	Factor 2	0.586	Substantial Relation
Having contract managers at company organization	Factor 1	0.565	Substantial Relation
Impact of project risk/complexity on behavior	Factor 1	-0.564	Substantial Relation
Not having contract managers at sites	Factor 3	0.520	Substantial Relation

5.1.2.2. Pre-Contract Process

These second process activities which are supposed to happen between the award of the bid and signing the contract briefly may be named as contract build up activities. Before any analysis it can be said that during the survey process two distinct approaches occurred about these activities. While the applicants who are mostly working for private owners and thus have a comparatively more ability to contribute contract build up highlighted the significance of this process, the applicants who are mostly working for public owners and thus have almost no means to take part in contract build up even sometimes considered this section to be null thus did not want to evaluate the listed strategies. As Zack Jr. (1993) states; in the public sector, there is no allowance for negotiation concerning the requirements of the contract documents under most public procurement rules, thus contractors theoretically are required to bid a public project on a take-it-or-leave-it basis. To resolve this

situation these contractors were asked to consider this process together with the pre-tender process. During tendering period contractors have the right to inform owner about any ambiguities or problems at the tender documents, where if owner would find the objection correct than this will be informed to all competitors. So the contractors working with public bodies were asked to evaluate this section as it is a part of the tendering process where they still can contribute to contract build up even it is very sharply limited.

Four strategies listed to the participants. One is the need to a clear contract where responsibilities and rights together with project goals are clearly defined. Haddad (2007) points that accurate and clear contract documents open the way for a more predictable and stable relationship among the contracting parties. Another strategy listed, is the requirement of a rigid contract where all possible outcomes of the project lifecycle are tried to be determined, defined and settled in the contract. The reverse for this is the flexible contract. Not every possibility can be foreseen and planned for, thus it is desirable that the contract include some flexibility for changing circumstances as well as procedures for handling changes (OGC, 2002; Elsey, 2007; Grutters, 2007; Krone, 1991). Third strategy listed is the negotiation of the contract terms before signing it. Major projects entail hundreds of issues and a multitude of implicit and explicit interests, resulting in substantially complex negotiations between the client and contractor (Murtoaro and Kujala, 2007). As Love (2007) underlines companies are deemed to be competent and free to make their own contracts and mistakes, and every company is free to drive as hard a bargain as it is powerful or clever enough to achieve, even if the resultant contract is damaging to another company. According to Love the golden rule of commercial contracts is “if you don’t like the terms, don’t take it”. The last strategy listed is a comprehensive and complete risk analysis of the contract where every clause is analyzed for disclosing its potential embedded risks. Table 21 demonstrates indexes of these strategies as rated by contractors. Ensuring the clarity of the contract was rated as the most preferred strategy. Interviewees consider clarity of the contract as a

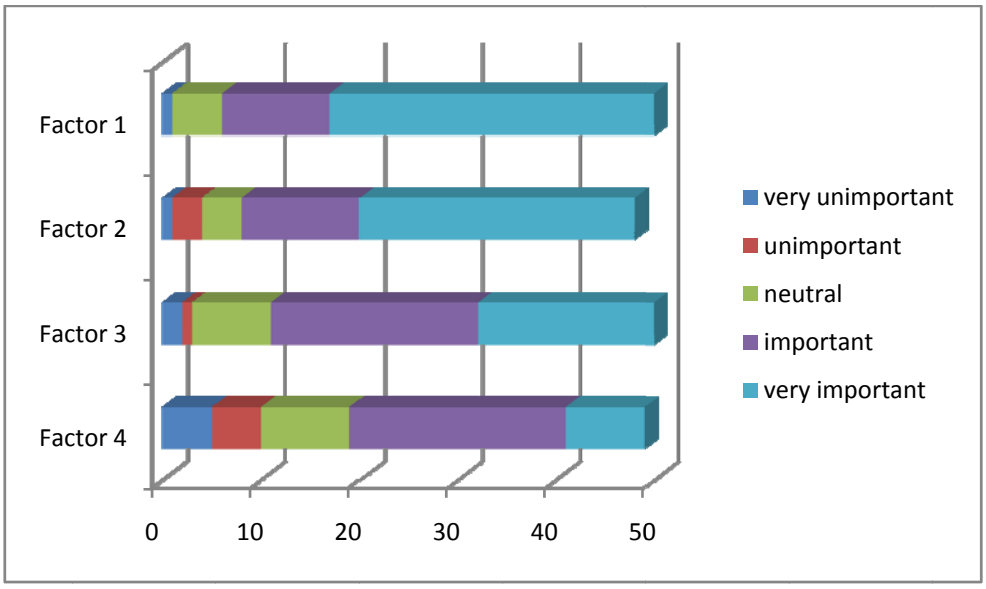
major factor to reduce project risks. Negotiating for contract clauses rated second. It was mentioned that competitors of public projects objected to strategies listed in this sections. This second rated strategy was the one most rejected. However almost all contractors, who thought this strategy to be null, also pointed that it would be great opportunity to be able to negotiate the terms. Contractual risk analysis rated third. Even though several contributors pointed that this strategy is of significance they noted also that they cannot apply this strategy in the comprehensive way as it is mentioned in the question. The least rated strategy building a rigid contract that defines and settles any possible outcomes also attracted rejections of those contractors working for public projects. Very interesting point to note is that, some of these contractors considering public owners to be unilateral and decisive on contracts thus considering these strategies to be null; claimed that even the standard forms of contracts are distorted by means of special conditions to the contract to shift risks, which was originally fairly allocated, to the contractor. Table 22 and Graph 29 display responses of contractors.

Table 21 Indexes for pre-contract process strategies

Strategy	Index	Rank
Ensuring clarity of the contract	87.5	Factor 1
Negotiating for contract clauses	82.8	Factor 2
Analyzing the contract risks in detail	76.0	Factor 3
Building a rigid contract that defines and settles any possible outcomes	61.7	Factor 4

Table 22 Importance of pre-contract process strategies

	very un-important	un-important	neutral	important	very important
Factor 1	1	0	5	11	33
Factor 2	1	3	4	12	28
Factor 3	2	1	8	21	18
Factor 4	5	5	9	22	8



Graph 29 Importance of pre-contract process strategies

Cross tabulations revealed interesting results not all could be referred to a reason. For example while the relation between factors 1, 2, and 3 are understandable, it is quit confusing that those contractors, who consider the impact of contract management on companies' success to be less significant, valued negotiation of contract clauses more than those, who consider the impact of contract management on companies' success to be more significant. Just the reverse is true and logical for contract risk analysis. Another understandable relation is that those contractors, who support continuous contract management application, value comprehensive analysis of the contract risks on

per clause basis. As it is a function of a continuous application this is self explanatory. Table 23 and Table 24 list relations found.

Table 23 Cross tabulations within pre-contract process strategies

Factors		Gamma	Relation
Factor 2	Factor 3	0.722	Strong Relation
Factor 1	Factor 3	0.600	Substantial Relation
Factor 1	Factor 2	0.530	Substantial Relation
Factor 3	Factor 4	0.505	Substantial Relation

Table 24 Cross tabulations for pre-contract process strategies

Factors		Gamma	Relation
Impact of contract management on success	Factor 2	-0.697	Substantial Relation
Application of Relationship Management Function	Factor 1	0.676	Substantial Relation
Impact of contract management on success	Factor 3	0.567	Substantial Relation
Continuous contract management application consideration	Factor 3	0.512	Substantial Relation

5.1.2.3. Regular Contract Process

This process covers period, where the contract is signed and valid, and the parties fulfill their responsibilities without claims and disputes. The strategies or practices presented are within three main elements of contract management, which in brief are; relationship, project delivery, and contract administration. For the relationship management function the listed three strategies are; developing personal relations with other parties and keeping personal communication strong, recording any kind of communication, and having a

continuous, clear and transparent communication together with developing mutual targets and understanding. Under the project delivery function; instant recording of changes, and continuous monitoring and management of possible risks are listed. The last function the contract administration represented with two strategies which are; appropriate and on time data gathering together with an efficient documentation and record system, and continuous and comprehensive contract administration based on knowledge to contract.

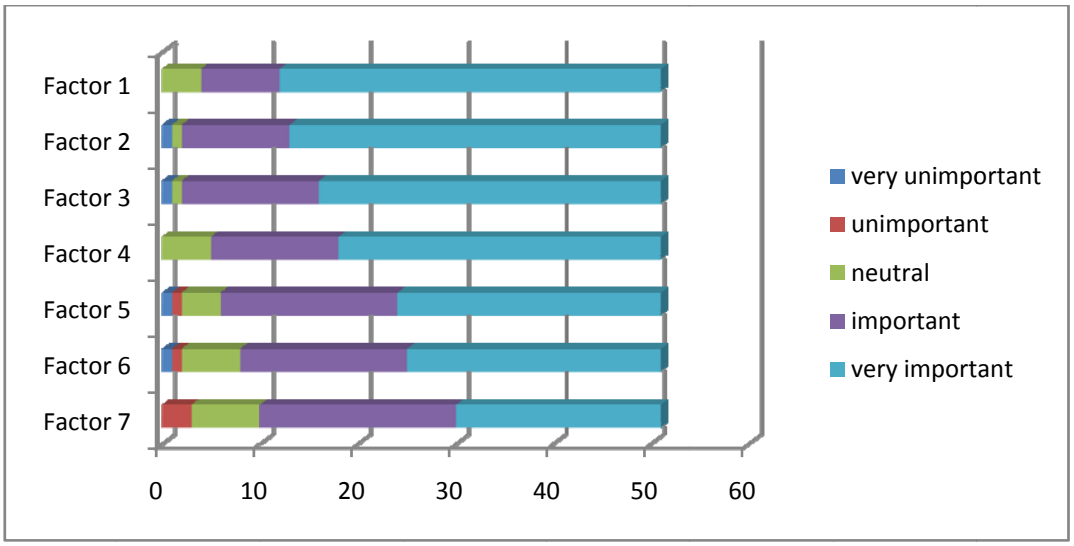
The strategies and their indexes as key factors for contract management are listed at Table 25. It can be realized at the very first glance that almost all strategies received comparatively high indexes. The strategies regarding contract administration and project delivery are rated more than strategies covered by relationship management function. This is quit conflicting that the contractors, when they were asked for their contract management approaches, ranked the weights given to these functions in their business practice just in the reverse order. Perhaps this trend on strategies is to close the gaps in practices or perhaps on the contrary because they have a higher awareness on these strategies they just do not feel satisfied enough with their applications. Until the reason is discovered by another subsequent study, the comment is left to the reader. Table 26 and Graph 30 illustrate the responses of the contractors for strategies in regular contract process.

Table 25 Indexes for regular contract process strategies

Strategy	Index	Rank
Instant recording of changes	92.2	Factor 1
Appropriate and on time data gathering together with an efficient documentation and record system	91.7	Factor 2
Recording any kind of communication (Meetings correspondence conversations)	90.2	Factor 3
Continuous and comprehensive contract administration based on knowledge to contract	88.7	Factor 4
Having a continuous, clear and transparent communication together with developing mutual targets and understanding	83.8	Factor 5
Continuous monitoring and management of possible risks	82.4	Factor 6
Developing personal relations with other parties and keeping personal communication strong	78.9	Factor 7

Table 26 Importance of regular contract process strategies

	very un-important	un-important	neutral	important	very important
Factor 1	0	0	4	8	39
Factor 2	1	0	1	11	38
Factor 3	1	0	1	14	35
Factor 4	0	0	5	13	33
Factor 5	1	1	4	18	27
Factor 6	1	1	6	17	26
Factor 7	0	3	7	20	21



Graph 30 Importance of regular contract process strategies

Table 27 and table 28 lists various strong and substantial relations obtained from cross tabulations. The high number of relations is noteworthy. In section 4.1 of the thesis it was mentioned that with such a wide questionnaire in order to prevent time losses during the interviews, questions and options of those factors which thought to be do not have a strong impact on behavior had been eliminated, and therefore the survey received quit high rates. It was also mentioned that for some this might shadow the efficiency and standing of the survey as well as it might be perceived as the high awareness of Turkish contractors about the concept and needs of contract management. It should be noted that this high number of relations is coming together with a quit high rates of almost all strategies. Moreover according to sector professionals, actions taken during the regular contract process has the biggest impact on success, when it is compared with other processes. So this high attention that reveals numerous relations might still called to be understandable. Those who have a more careful look in to this bunch of relations can easily notice that the first three strategies which are all related to recording of activities from different functions of contract management, and the continuous contract

administration, which is at the heart of all documentation expose majority of the relations within the regular contract process strategies. It is quite reasonable that continuous contract administration based on contract knowledge has a relation with continuous monitoring and management of risks, as the base of the risk allocation is the contract between the parties. It is neither surprising that there exist relation between the responses for strategies regarding the relationship management function, which are developing personal relations together with a strong communication and having a continuous, clear, and transparent communication together with mutual understanding. Nevertheless it can be called natural that the factors like impact of contract management on success and continuous contract management application consideration has many relations with these quit high rated strategies.

Table 27 Cross tabulations within regular contract process strategies

Factors		**Gamma**	**Relation**
Factor 1	Factor 2	0.969	Strong Relation
Factor 1	Factor 4	0.863	Strong Relation
Factor 2	Factor 3	0.853	Strong Relation
Factor 1	Factor 3	0.830	Strong Relation
Factor 2	Factor 4	0.823	Strong Relation
Factor 4	Factor 6	0.711	Strong Relation
Factor 3	Factor 4	0.662	Substantial Relation
Factor 3	Factor 7	0.570	Substantial Relation
Factor 1	Factor 5	0.544	Substantial Relation
Factor 5	Factor 7	0.505	Substantial Relation
Factor 2	Factor 5	0.501	Substantial Relation

Table 28 Cross tabulations for regular contract process strategies

Factors		Gamma	Relation
Impact of contract management on success	Factor 1	0.833	Strong Relation
Impact of contract management on success	Factor 2	0.808	Strong Relation
Having contract managers at company organization	Factor 7	0.755	Strong Relation
Impact of contract management on success	Factor 4	0.711	Strong Relation
International experience of Company	Factor 2	0.703	Strong Relation
Continuous contract management application consideration	Factor 3	0.675	Substantial Relation
Continuous contract management application consideration	Factor 2	0.654	Substantial Relation
Continuous contract management application consideration	Factor 7	0.598	Substantial Relation
Application of Relationship Management Function	Factor 2	0.585	Substantial Relation
International experience of Company	Factor 1	0.541	Substantial Relation
Impact of contract management on success	Factor 5	0.539	Substantial Relation
Having contract managers at company organization	Factor 4	0.525	Substantial Relation
Size of the company	Factor 6	-0.525	Substantial Relation
Application of Relationship Management Function	Factor 5	0.523	Substantial Relation
Impact of contract management on success	Factor 7	0.523	Substantial Relation
Continuous contract management application consideration	Factor 1	0.516	Substantial Relation
Not having contract managers at sites	Factor 5	0.515	Substantial Relation
Application of Relationship Management Function	Factor 1	0.514	Substantial Relation

5.1.2.4. Claim Process

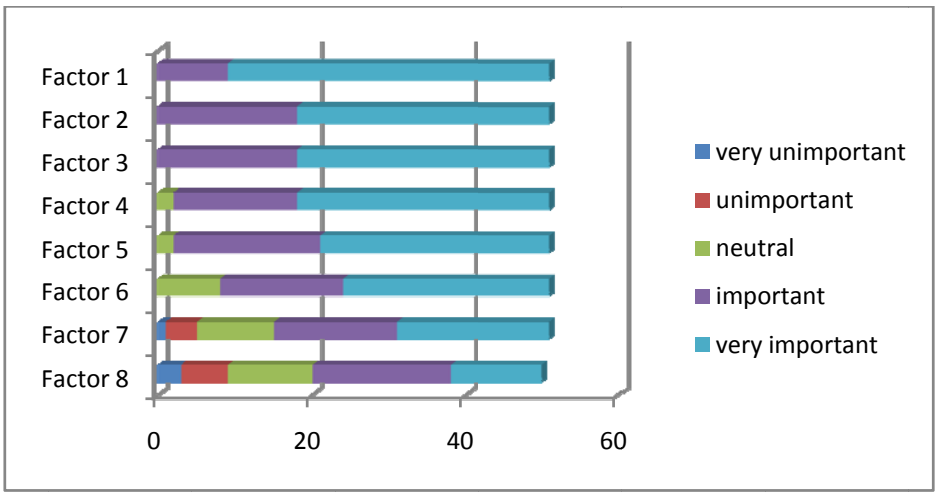
The goal of claim management is to enforce justifiable claims, and to defense against unjustified claims of other parties (Grutters, 2007). Deficiencies in both mean economic losses thus claim process requires right steps to be taken. In order to investigate these right actions eight strategies were listed to the respondents. The six of these strategies as it was previously given at section 4.1 were gathered from claim process framework presented by Kululanga et al. (2001). These six strategies also treated at section 2.4.1 in detail are; claim documentation, claim identification, claim notification, claim examination, claim presentation, and claim negotiation. The remaining two strategies presented are preventing from disputes, and handling claims with personal relations. The former tries to measure whether Turkish contractors waive their contractual rights and claims in order to abstain consequences when a dispute arises, while the latter tries to measure willingness of Turkish contractors to waive their contractual rights and claims against the owners that they have close relations. The indexes for the strategies are presented at Table 29. Respondents ranked six elements introduced by Kululanga et al. and focus on formal preparation of claim higher than the other two, which focus on their approach to claims. This can be referred to that Turkish contractors are well aware of importance of chasing their money in an environment where profits rates are declining every day. However the rates for these last two items can still called to be relatively high. It should be noted that some contractors argued avoiding dispute as a matter of honor and stated that rather than having a legal case they would rather suffer all loss. The claim notification rated most and almost all respondents rated claim notification to be significance also stated that this is due to the fact that notification period is always declared by the contract and different than other options, of which shortages might somehow be handled, any fault with notification would lead to a total loss of claim. The responses of the respondents for claim process strategies are given at Table 30 and Graph 31.

Table 29 Indexes for claim process strategies

Strategy	Index	Rank
claim notification	95.6	Factor 1
claim identification	91.2	Factor 2
claim documentation	91.2	Factor 3
claim negotiation	90.2	Factor 4
claim examination	88.7	Factor 5
claim presentation	84.3	Factor 6
Preventing from disputes	74.5	Factor 7
Handling claims with personal relations	65.0	Factor 8

Table 30 Importance of claim process strategies

	very un-important	un-important	neutral	important	very important
Factor 1	0	0	0	9	42
Factor 2	0	0	0	18	33
Factor 3	0	0	0	18	33
Factor 4	0	0	2	16	33
Factor 5	0	0	2	19	30
Factor 6	0	0	8	16	27
Factor 7	1	4	10	16	20
Factor 8	3	6	11	18	12



Graph 31 Importance of claim process strategies

The strong and substantial relations revealed by the cross tabulations are listed in Table 31 and Table 32. It can be viewed that except claim negotiation almost all elements of claim process framework elements have strong and substantial relations. In other words contractors consider these elements as a package for success rather than individual strategies. Why claim negotiation, which is more rated than some members of the package, is considered to be alone than? This might be due to the nature of the negotiation. The other elements of the framework mostly relies on developped techniques and willingness to apply, however negotiation is an art which requires talent of individuals as well as the techniques and willingness. As a matter of fact some respondents rating claim negotiation as a significant strategy also referred to individuals within the company noting: “Mr. X is perfect in negotiation he can influence others and lead the issue to anywhere he likes.” Nonetheless it is interesting that these contractors, who rely on contract negotiation, are the ones who also more waive from their claims in order to prevent their close relations with the owners. Considering claim negotiation has no relation with other elements of the framework it can be commented that rather than a result of their concentration on negotiation this might be a result of their lack of attention on the other techniques. The relations indicate that the supporters of continuous contract management application are more likely to waive from their claims in order to prevent their close relations with the owners. Considering this philosophy on contract management is based on win-win solutions, this might be the reflection of the desire to create a balance between their claims and relations. It is understandable that those contractors who believe in the effect of contract management on the success of the company mostly rated the four top ranked strategies together with the avoidance from disputes. An interesting relation is that those contractors, who have more attention on documentation, are more likely to waive from their rights rather than going on disputes. One more interesting relation is that those companies, whose contract management behavior is not impacted by different contract types like lump sum or unit price, are also more likely to waive from their rights rather than going on disputes.

Another interesting relation is that the size of the company has a strong reverse relation with the value given to claim notification. Middle and middle-large size companies have more growing awareness for notification of claim appropriately. These three relations are left to the comments of readers.

Table 31 Cross tabulations within claim process strategies

Factors		**Gamma**	**Relation**
Factor 1	Factor 2	1.000	Strong Relation
Factor 1	Factor 3	0.925	Strong Relation
Factor 2	Factor 3	0.871	Strong Relation
Factor 2	Factor 6	0.745	Strong Relation
Factor 3	Factor 5	0.729	Strong Relation
Factor 1	Factor 6	0.723	Strong Relation
Factor 1	Factor 5	0.720	Strong Relation
Factor 3	Factor 6	0.685	Substantial Relation
Factor 4	Factor 8	0.570	Substantial Relation
Factor 3	Factor 7	0.554	Substantial Relation
Factor 2	Factor 5	0.532	Substantial Relation

Table 32 Cross tabulations for claim process strategies

Factors		**Gamma**	**Relation**
Size of the company	Factor 1	-0.766	Strong Relation
Continuous contract management application consideration	Factor 8	0.739	Strong Relation
Impact of contract management on success	Factor 3	0.735	Strong Relation
Impact of contract management on success	Factor 2	0.708	Strong Relation
Impact of contract management on success	Factor 1	0.655	Substantial Relation
Impact of contract management on success	Factor 4	0.617	Substantial Relation
Impact of contract type on behavior	Factor 8	-0.589	Substantial Relation
Impact of contract management on success	Factor 7	0.554	Substantial Relation

5.1.2.5. Dispute Process

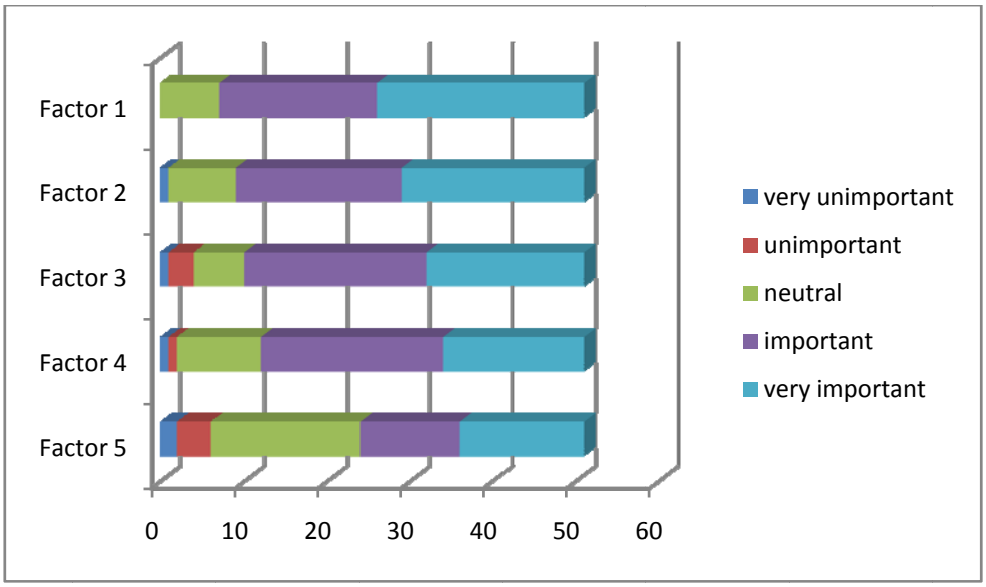
The dispute process heading includes five strategies for participants' consideration. One asks companies to rate their opinion on the bindingness of the resolution method in order to measure their preferences on litigation, arbitration or alternative dispute resolution methods. The other four strategies are based on Cheung's (1999) study and introduced at section 4.1 in detail. These factors are the cost involved, preservation of relationship, the duration of the proceeding, and manageability of the proceeding. The respondents clearly informed to consider manageability of the proceeding as a combination of the parties' ability to control over the proceeding, and flexibility of the proceeding. The indexes for these five strategies are presented at Table 33. Table 34 and Graph 32 demonstrate the responses.

Table 33 Indexes for dispute process strategies

Strategy	Index	Rank
Speed	83.8	Factor 1
Manageability	80.4	Factor 2
Bindingness	77.0	Factor 3
Preservation of the relation	76.0	Factor 4
Economy	66.7	Factor 5

Table 34 Importance of dispute process strategies

	very un-important	un-important	neutral	important	very important
Factor 1	0	0	7	19	25
Factor 2	1	0	8	20	22
Factor 3	1	3	6	22	19
Factor 4	1	1	10	22	17
Factor 5	2	4	18	12	15



Graph 32 Importance of dispute process strategies

The results indicate that Turkish contractors mostly concerned on the speed of the resolution and manageability of it. The manageability also involves the preference on the law. Many respondents pointed that if they had the opportunity they would try to bind the law of the contract to law of a country, which is more similar to Turkish laws in order to get the advantage that the lawyers of the company are more familiar with it. These contractors stated that any dispute process can be handled much more easily as the playground or the law framework is more known. The bindingness as listed at the third rank shows that there are still doubts on success of alternative dispute resolution methods, and contractors prefer arbitration and litigation more. It should be noted the desire in quick resolutions points to arbitration between these two. The last two rated strategies are the preservation of the relation and the economy.

Table 35 and Table 36 display relations, those are revealed by the cross tabulations. The importance given to manageability of the process increases with the desire for more binding resolutions. This might be due to habits of the

contractors. As previously stated there are doubts on alternative dispute resolution processes. The contractors perhaps consider it is easy to manage the resolution methods, to which they are used to. The quick resolution is also related with the manageability. It is understandable that the respondents consider increased control as an accelerator for resolution. Those contractors, who consider that contract management has an impact on company success, and those contractors, who more care about the application of relationship management function of it, have growing concern on the speedy solutions. It is self explanatory that these contractors value quick resolutions relying on relations as a success for company. The preference of contractors, who do not employ contract managers at their projects, on economy of solution is left to the comments of the reader.

Table 35 Cross tabulations within dispute process strategies

Factors		**Gamma**	**Relation**
Factor 2	Factor 3	0.507	Substantial Relation
Factor 1	Factor 2	0.505	Substantial Relation

Table 36 Cross tabulations for dispute process strategies

Factors		**Gamma**	**Relation**
Application of Relationship Management Function	Factor 1	0.643	Substantial Relation
Not having contract managers at sites	Factor 5	0.634	Substantial Relation
Impact of contract management on success	Factor 1	0.553	Substantial Relation

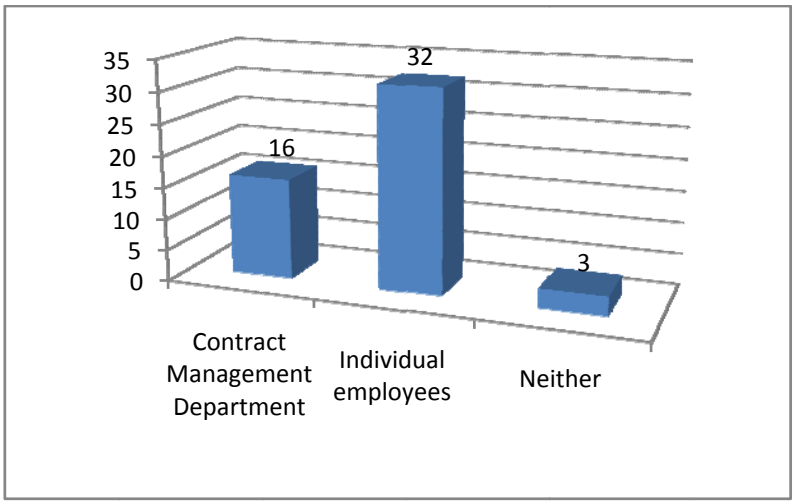
5.2. Contract Management Profiles of Companies

A goal of the study is to look into the contract management profiles, in other words the contract management organizations of the companies. Organizing is the process of determining the positions, defining the responsibilities, and establishing the relationship between them (Clough, 1975). According to Clough the establishment of an effective operating organization is one of the principle functions of management. As given by OGC (2002) for smaller contracts, a single individual may be enough to carry out all contract management responsibilities, but for larger contracts, a contract management team may be required, therefore it will be necessary to assess the management structures proposed for each contract to be managed, and ensure adequate staff resources are available to make them work. Dikmen (2005) states that the choices of organizational structure, that best suit for the company, depend on several factors such as the size of the company etc., and as the construction industry is project based, companies operating in this sector are organized accordingly and there are two different management levels; corporate level and project level. The question is: "How do Turkish contractors organize in both corporate and project levels for a successful contract management and what are the factors that influence their organizations?" In order to be able to answer this question, respondents were requested to reply the following questions.

Contract management at corporate level

First the contractors were asked whether there are any contract management department or individual employees, those are responsible with contract management process at the corporate level. The results can be viewed from Graph 33. 16 of the respondent companies have contract management departments. 32 On the other hand have no such department but employ individuals with contract management. It should be noted that while several contractors in this group employ personnel attributed to only contract management, the rest charge personnel, those are employed for any other tasks,

with additional contract management tasks. However there is still a well defined task attachment. Assistant general managers and projects coordinators are those, who mostly undertake this additional function. 3 of the companies neither have a contract management department nor have individuals who are responsible with contract management process. These companies indicated that they leave contract management related tasks to tender departments initially and then leave it all to project teams. The impacts of corporate organizational differences on company strategies as they revealed was listed in cross tabulations at previous section. Further cross tabulations regarding the impact of company properties, contract management approaches, or factors impacting behavior on the corporate organizational differences did not reveal any relation significant. In other words contract management organizations at the corporate level are independent from these three issues.

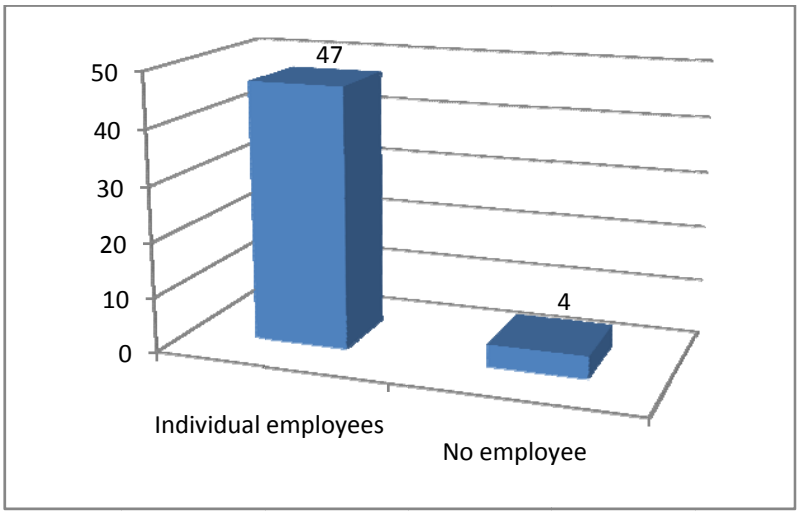


Graph 33 Groups/individuals appointed to contract management at corporate level

Contract management at project level

The contractors also were asked whether they employ contract managers at project sites or organizations. As given at Graph 34, while 4 of the contractors conduct all contract management operations at corporate level thus do not have

any individuals appointed with contract management tasks at project organizations, 47 have individuals at site who are responsible for contract management. However just as corporate organizations, while several companies suggested that they employ individuals entirely on contract management function, others reported that they request project personnel, who are employed on other functions, to also run the contract management task. For these personnel even though it is an additional one there still exists a clear task appointment. Project managers and technical office or construction managers mostly pointed to be the personnel, who are appointed with contract management. However the efficiency of such appointments is arguable. As Grutters (2007) argues it is frequently not the technical contractual clauses that contain risks that could endanger the success of the project but rather the legal or commercial sections that have a key influence on the result. According to Grutters this is where the engineers are often overstretched because they do not have the legal or commercial training required.



Graph 34 Groups/individuals appointed to contract management at corporate level

Another important issue about appointment of individuals at project organizations as noted by respondents is the size and complexity of the project. Out of 47 companies, who appoint personnel on contract management at sites, some underlined that for small and not complex projects they do not have such an application. This also revealed as a relation by the cross tabulations. As it can be viewed from Table 37; impact of project risk and complexity on contract management behavior, and having contract managers at site have a moderate relation. Some other and stronger relations that revealed by cross tabulations but were not mentioned by survey contributors are impact of contract type, impact relations with the owner, and impact of project duration. One significant finding of cross tabulations with a gamma value of 1.000 is that companies with a current continuous contract management application assign their project personnel to contract management functions.

Table 37 Cross tabulations for project contract management organizations

Factors		**Gamma**	**Relation**
Continuous contract management application	Having contract managers at site	1,000	Strong Relation
Impact of contract type on behavior	Having contract managers at site	0,817	Strong Relation
Impact of relations with the owner on behavior	Having contract managers at site	0,787	Strong Relation
Impact of project duration on behavior	Having contract managers at site	0,674	Substantial Relation
Impact of project risk/complexity on behavior	Having contract managers at site	0,462	Moderate Relation

Contribution of individuals/groups to contract management process

Following these two questions treating individuals and groups who are appointed with contract management tasks at both corporate and project levels, the wider perspective on contract management process of the companies

investigated. The different individuals or groups from company organizational charts compared with the contract management processes to find out their partial contributions to the process. In order to do this for both company and project organizations a matrix of company parties and contract management processes presented to the applicants. On the horizontal axis of the matrixes of the both management levels; pre-tender, pre-contract, regular contract, claim, and dispute processes together with three decision points; the decision to sign the contract, the decision to prepare a claim, and the decision to dispute, which means that the conflict cannot be solved by two parties, listed. The vertical axis for corporate organization listed; top management, strategic planning department, contract management department, legal department, tender department, planning/cost control department, finance department, and consultants as company parties. The vertical axis for project organization listed; project manager, project technical office, contract manager, lawyer(s), engineer/ technical staff, and consultants. Given these two matrixes participants were asked to mark individuals or departments who participate in different contract management processes.

Contribution of individuals/groups at corporate level

	pre-tender process	pre-contract process	contract decision	regular contract	claim decision	claim process	dispute decision	dispute process		
Top Management	66,7	62,7	98,0	37,3	58,8	33,3	90,2	64,7		64,0
Strategic Planing Department	82,4	68,6	45,1	21,6	15,7	17,6	9,8	15,7		34,6
Contract Management D.	51,0	56,9	56,9	60,8	56,9	60,8	45,1	39,2		53,4
Legal Department	35,3	56,9	45,1	31,4	41,2	56,9	72,5	86,3		53,2
Tender Department	88,2	72,5	37,3	7,8	9,8	7,8	5,9	9,8		29,9
Planning & Cost Control D.	35,3	35,3	23,5	62,7	43,1	39,2	17,6	21,6		34,8
Finance Department	49,0	54,9	33,3	62,7	17,6	23,5	17,6	19,6		34,8
Consultants	27,5	29,4	13,7	33,3	17,6	25,5	27,5	35,3		26,2
	54,4	54,7	44,1	39,7	32,6	33,1	35,8	36,5		

Figure 12 Corporate organization and contract management processes matrix indexes

Figure 12 represents indexes of corporate contribution matrix. Top management of the companies mostly takes part in contracting and dispute decisions. Top management, following, mostly takes part in processes before the contract and the dispute process. This is due to their authority in consideration of business risks. Strategic planning departments and tendering departments naturally positioned at the processes before the contract. They are the first groups to evaluate the contract documents and risks. During other processes their mission is mostly advising the other groups on the basis that they initially evaluate these documents and risks. Contract management department or individuals have a relatively smooth distribution. They normally take part almost equally at all processes and decisions except the dispute related ones where they leave the stage to legal department, which play the advisor role through all other processes and decisions. Here the complaints of respondents worth to note. Respondents frequently complain about four issues. First the lack of contract law knowledge of Turkish lawyers, second the lack of English language knowledge of them. Together with these two as the third because employing lawyers in regular processes irritates other parties, companies rather tries to train engineers on contract management. However the fourth problem occurs here. Turkish engineers have almost no knowledge on legal issues. Many contributors underlined such a need and noted that civil engineering departments should supply courses on legal issues to their students. Planning and finance departments were mentioned as departments, who supply information to other groups regarding their subjects. According to most participants consultancy is needed only when the company is not able to proceed with it is own abilities, or the work load is too high to handle.

Contribution of individuals/groups at project level

	pre-tender process	pre-contract process	contract decision	regular contract	claim decision	claim process	dispute decision	dispute process		
Project Manager	33,3	41,2	47,1	96,1	100,0	96,1	82,4	88,2		73,0
Project Technical Office	9,8	9,8	13,7	78,4	60,8	70,6	35,3	49,0		40,9
Contract Manager	23,5	29,4	29,4	76,5	76,5	80,4	56,9	68,6		55,1
Lawyer(s)	11,8	15,7	17,6	27,5	23,5	31,4	45,1	58,8		28,9
Engineer/Technical Staff	17,6	17,6	11,8	68,6	39,2	49,0	19,6	35,3		32,4
Consultants	11,8	17,6	9,8	23,5	23,5	29,4	31,4	31,4		22,3
	18,0	21,9	21,6	61,8	53,9	59,5	45,1	55,2		

Figure 13 Corporate organization and contract management processes matrix indexes

Figure 12 demonstrates indexes of project contribution matrix. A very natural outcome is project personnel's little contribution to stages before the contract, except for some companies, which shift personnel between head office to projects or vice versa and projects to projects frequently. It should be noted that many companies underlined here that, for success in contract management it would be benefit, especially for project managers a great benefit, to have the key project personnel at these initial processes. However considering only little portion of all attended bids achieved this is impossible. Few companies, when they were asked about their suggestions, rejected this view and noted that such benefits are not the ones that could not be achieved through an effective documentation during these stages. Project managers are the personnel introduced most at contract management functions and as rated by all contributors the ultimate personnel to decide to prepare a claim. Project technical offices play a key role especially in documentation for both project delivery and relationship management functions. Contract managers for regular contract process, and claim stages rated more than contract managers at corporate level, especially at dispute processes. This is because they are witnesses of the dispute chronology, who is supposed to cooperate with legal department. Lawyers on the other hand rated much less when compared to legal department. Engineers and technical staff mostly established as those who

share information with parties conducting contract management functions. Consultants considered as they were at corporate level.

Effects of different contributions to contract management process

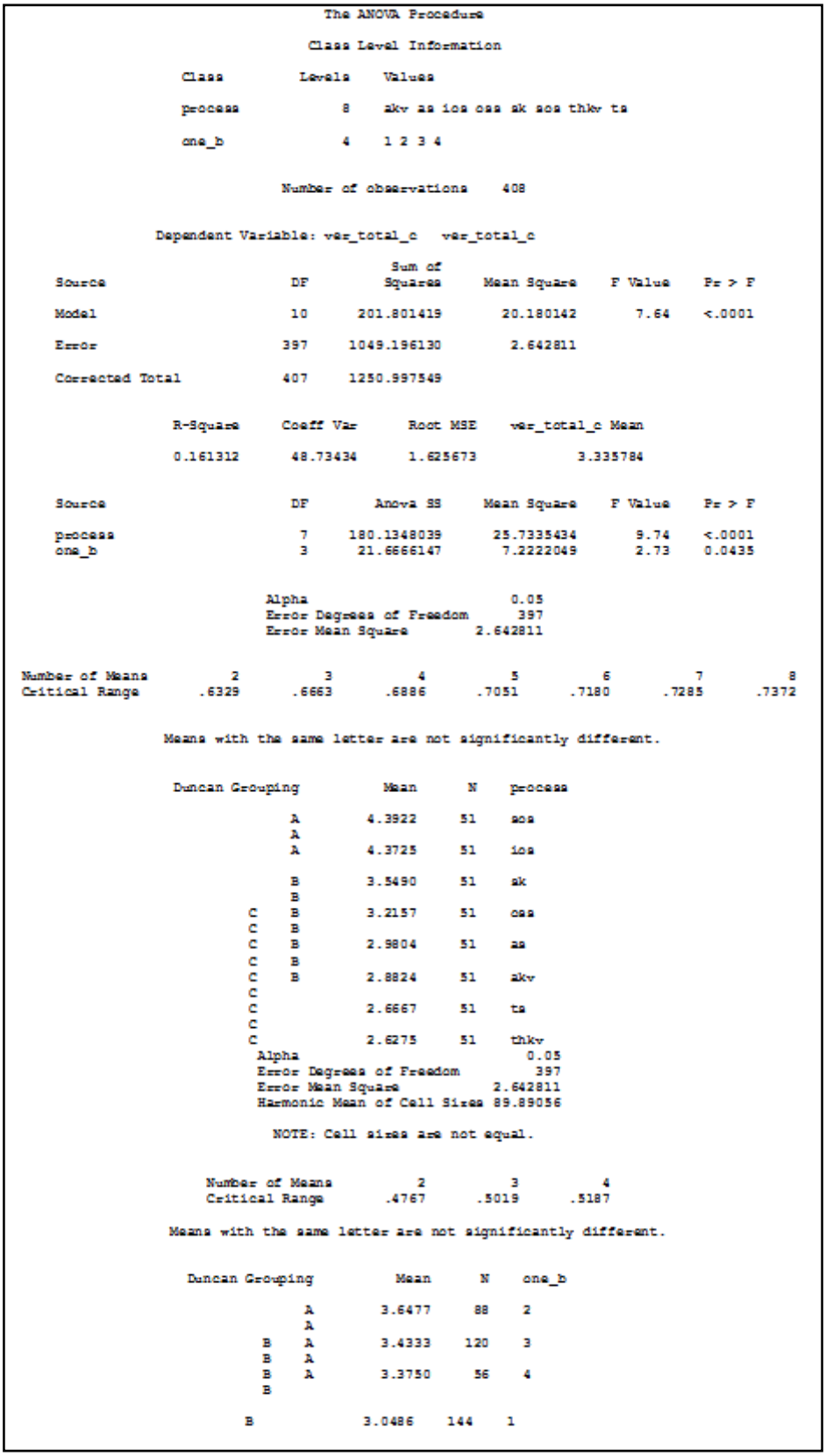
In order to find relations of these two contribution matrixes with other variables like the impact of company properties and contract management approaches of companies further statistical research based on Anova and Duncan tests conducted via SAS software. However on this point of research limitations to study, based on the abilities of statistical analysis team, raised. First the matrix is already in two dimensions and running Anova analysis on, together with the other variables, three dimensions was beyond the knowledge thus ability of the researchers. This problem was solved by running analysis for both dimensions independently. The behavior of the results if the analysis had run in three dimensions is still unknown. As well as they might be so, the results presented however do not promise to be identical with results of such analysis. The second issue is that for those relations found, it only could be revealed that such a relation exists. The direction of the effects or in other words how do they influence the matrix could not be revealed. Such a detailed statistical study, which requires extensive statistical knowledge and expertise, perhaps might attract further researchers.

The first test run for corporate management level displayed that Turkish contractors need more contribution in pre-tender and pre-contract processes. Following these two stages regular contract process and the contract decision grouped. The last group that requires less contribution involves claim and dispute decisions, and the processes of both. It was found that the international experience has an effect on these groups. The companies with 0-10 years experience differing from those with experience more than 10 years. The SAS program output for this relation is illustrated at figure 14. The size of the company also found to be effective. Middle and middle-large companies found to be behaving differently in this grouping than the large size companies. The

companies attention on relationship function of contract management revealed that those companies give significance to this function differ than others. Finally attributing contract management task to individuals or groups at both corporate or project management levels influences the distribution. Employing contract management responsibility to a contract management department, or individuals at both levels impact these groups.

The second test on corporate management level displayed that there are two groups as contributors. Top management, contract management department and legal department has similar weights of attendance where the rest of the departments; have similar weights in between. The only factor has an impact on these groupings is attributing contract management task to individuals and groups at corporate management level.

The first test run at the project organization matrix on the other hand showed that the most contributed processes and decisions at this level are regular contract, claim, dispute processes, and claim decision. The second is the dispute decision. The third group involves the three stages before the contract; which are pre-tender and pre-contract processes and contract decision. These groups are influenced by the international experience of the company. Companies with 10-20 years and over 30 years experience behave similarly. Firms with 20-30 years experience and firms with 0-10 years experience behave different from them and each other. Another factor is the weight given to project delivery function of contract management. Companies give a significant weight to this function behave different than others. Attributing contract management task to individuals or groups at both corporate and project management levels influences the distribution also like it does in corporate level.



The ANOVA Procedure

Class Level Information

Class	Levels	Values
process	8	akv as ios oss ak aos thkv ta
one_b	4	1 2 3 4

Number of observations 408

Dependent Variable: var_total_c var_total_c

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	10	201.801419	20.180142	7.64	<.0001
Error	397	1049.196130	2.642811		
Corrected Total	407	1250.997549			

R-Square	Coeff Var	Root MSE	var_total_c Mean
0.161312	48.73434	1.625673	3.335784

Source	DF	Anova SS	Mean Square	F Value	Pr > F
process	7	180.1348039	25.7335434	9.74	<.0001
one_b	3	21.6666147	7.2222049	2.73	0.0435

Alpha 0.05
Error Degrees of Freedom 397
Error Mean Square 2.642811

Number of Means	2	3	4	5	6	7	8
Critical Range	.6329	.6663	.6886	.7051	.7180	.7285	.7372

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	process
A	4.3922	51	aos
A			
A	4.3725	51	ios
B	3.5490	51	ak
B			
C B	3.2157	51	oss
C B			
C B	2.9804	51	as
C B			
C B	2.8824	51	akv
C			
C	2.6667	51	ta
C			
C	2.6275	51	thkv

Alpha 0.05
Error Degrees of Freedom 397
Error Mean Square 2.642811
Harmonic Mean of Cell Sizes 89.89056

NOTE: Cell sizes are not equal.

Number of Means	2	3	4
Critical Range	.4767	.5019	.5187

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	one_b
A	3.6477	88	2
A			
B A	3.4333	120	3
B A			
B A	3.3750	56	4
B			
B	3.0486	144	1

Figure 14 Sample Anova output for contribution matrixes relation analysis

The second test run at this level displayed four groups of attendance. The project manager is the first with most attendance. It is followed by the contract managers. The third is the project technical office. The last group involves engineers or technical staff, lawyers and consultants. This grouping is influenced by the size of the company. Similar to first test companies with 10-20 years and over 30 years experience behave similarly where those with 20-30 years experience and with 0-10 years experience behave different from them and each other. Another factor influencing this grouping is attributing contract management task to individuals and groups at corporate management level.

Tests on one dimensions resulted that the contribution matrix at corporate level is, in both dimensions, only affected by employing contract management responsibility to a contract management department, or individuals at corporate level. This factor influences the contribution matrix at project level in two dimensions as well. In addition the matrix for project level also impacted by the international experience of the company in both dimensions.

As it was previously noted the behavior of the results if the analysis had run for both dimensions simultaneously is still unknown. The results may or may not vary from what have been found in this study. It was also noted that what can be argued here is only that there is an impact. The direction of the effects or in other words how do they influence the matrix could not be found. Figure 15, Figure 16, and Figure 17 graphically illustrates these variations at matrixes. These figures might give the reader an idea about the distributions, until any further study reveal all relations.

Companies with contract management departments										
	pre-tender process	pre-contract process	contract decision	regular contract	claim decision	claim process	dispute decision	dispute process		
Top Management	63,2	57,9	94,7	21,1	42,1	26,3	89,5	52,6		55,9
Strategic Planing Department	84,2	68,4	42,1	15,8	15,8	15,8	15,8	15,8		34,2
Contract Management D.	52,6	68,4	68,4	73,7	73,7	78,9	52,6	42,1		63,8
Legal Department	36,8	52,6	52,6	31,6	52,6	57,9	73,7	94,7		56,6
Tender Department	84,2	89,5	47,4	5,3	15,8	10,5	10,5	10,5		34,2
Planning & Cost Control D.	36,8	47,4	26,3	73,7	47,4	47,4	26,3	26,3		41,4
Finance Department	52,6	63,2	26,3	63,2	21,1	15,8	21,1	15,8		34,9
Consultants	26,3	42,1	15,8	31,6	21,1	26,3	26,3	31,6		27,6
	54,6	61,2	46,7	39,5	36,2	34,9	39,5	36,2		

Companies with contract management individuals.										
	pre-tender process	pre-contract process	contract decision	regular contract	claim decision	claim process	dispute decision	dispute process		
Top Management	68,8	62,5	96,9	46,9	65,6	37,5	87,5	71,9		67,2
Strategic Planing Department	81,3	68,8	46,9	25,0	15,6	18,8	6,3	15,6		34,8
Contract Management D.	46,9	46,9	46,9	50,0	43,8	46,9	37,5	34,4		44,1
Legal Department	31,3	56,3	37,5	28,1	31,3	53,1	68,8	78,1		48,0
Tender Department	87,5	59,4	28,1	9,4	6,3	6,3	3,1	9,4		26,2
Planning & Cost Control D.	34,4	28,1	21,9	56,3	37,5	31,3	9,4	15,6		29,3
Finance Department	46,9	50,0	37,5	59,4	15,6	25,0	15,6	21,9		34,0
Consultants	28,1	21,9	12,5	34,4	15,6	21,9	25,0	34,4		24,2
	53,1	49,2	41,0	38,7	28,9	30,1	31,6	35,2		

Figure 15 Matrixes at corporate level for different contract management appointments at corporate level

Companies with contract management departments										
	pre-tender process	pre-contract process	contract decision	regular contract	claim decision	claim process	dispute decision	dispute process		
Project Manager	36,8	52,6	52,6	94,7	94,7	94,7	89,5	89,5		**75,7**
Project Technical Office	15,8	10,5	15,8	73,7	57,9	63,2	26,3	26,3		**36,2**
Contract Manager	31,6	47,4	42,1	78,9	84,2	78,9	63,2	68,4		**61,8**
Lawyer(s)	10,5	15,8	15,8	21,1	26,3	21,1	57,9	68,4		**29,6**
Engineer/Technical Staff	21,1	21,1	15,8	68,4	36,8	47,4	15,8	26,3		**31,6**
Consultants	15,8	31,6	15,8	21,1	26,3	36,8	31,6	36,8		**27,0**
	21,9	**29,8**	**26,3**	**59,6**	**54,4**	**57,0**	**47,4**	**52,6**		**43,6**

Companies with contract management individuals.										
	pre-tender process	pre-contract process	contract decision	regular contract	claim decision	claim process	dispute decision	dispute process		
Project Manager	28,1	31,3	40,6	93,8	100,0	93,8	75,0	84,4		**68,4**
Project Technical Office	6,3	9,4	9,4	78,1	62,5	71,9	40,6	59,4		**42,2**
Contract Manager	15,6	15,6	18,8	71,9	68,8	78,1	50,0	65,6		**48,0**
Lawyer(s)	12,5	12,5	15,6	28,1	21,9	34,4	37,5	50,0		**26,6**
Engineer/Technical Staff	12,5	12,5	6,3	65,6	37,5	46,9	18,8	37,5		**29,7**
Consultants	9,4	9,4	6,3	25,0	21,9	25,0	31,3	28,1		**19,5**
	14,1	**15,1**	**16,1**	**60,4**	**52,1**	**58,3**	**42,2**	**54,2**		**39,1**

Figure 16 Matrixes at project level for different contract management appointments at corporate level

Companies with 0-10 years international experience										
	pre-tender process	pre-contract process	contract decision	regular contract	claim decision	claim process	dispute decision	dispute process		
Project Manager	44,4	38,9	50,0	94,4	100,0	88,9	83,3	83,3		72,9
Project Technical Office	5,6	16,7	5,6	61,1	44,4	55,6	16,7	33,3		29,9
Contract Manager	16,7	22,2	16,7	61,1	72,2	72,2	27,8	44,4		41,7
Lawyer(s)	16,7	11,1	11,1	16,7	5,6	27,8	50,0	55,6		24,3
Engineer/Technical Staff	16,7	16,7	11,1	72,2	33,3	38,9	5,6	16,7		26,4
Consultants	16,7	16,7	16,7	27,8	22,2	38,9	38,9	38,9		27,1
	19,4	20,4	18,5	55,6	46,3	53,7	37,0	45,4		37,0

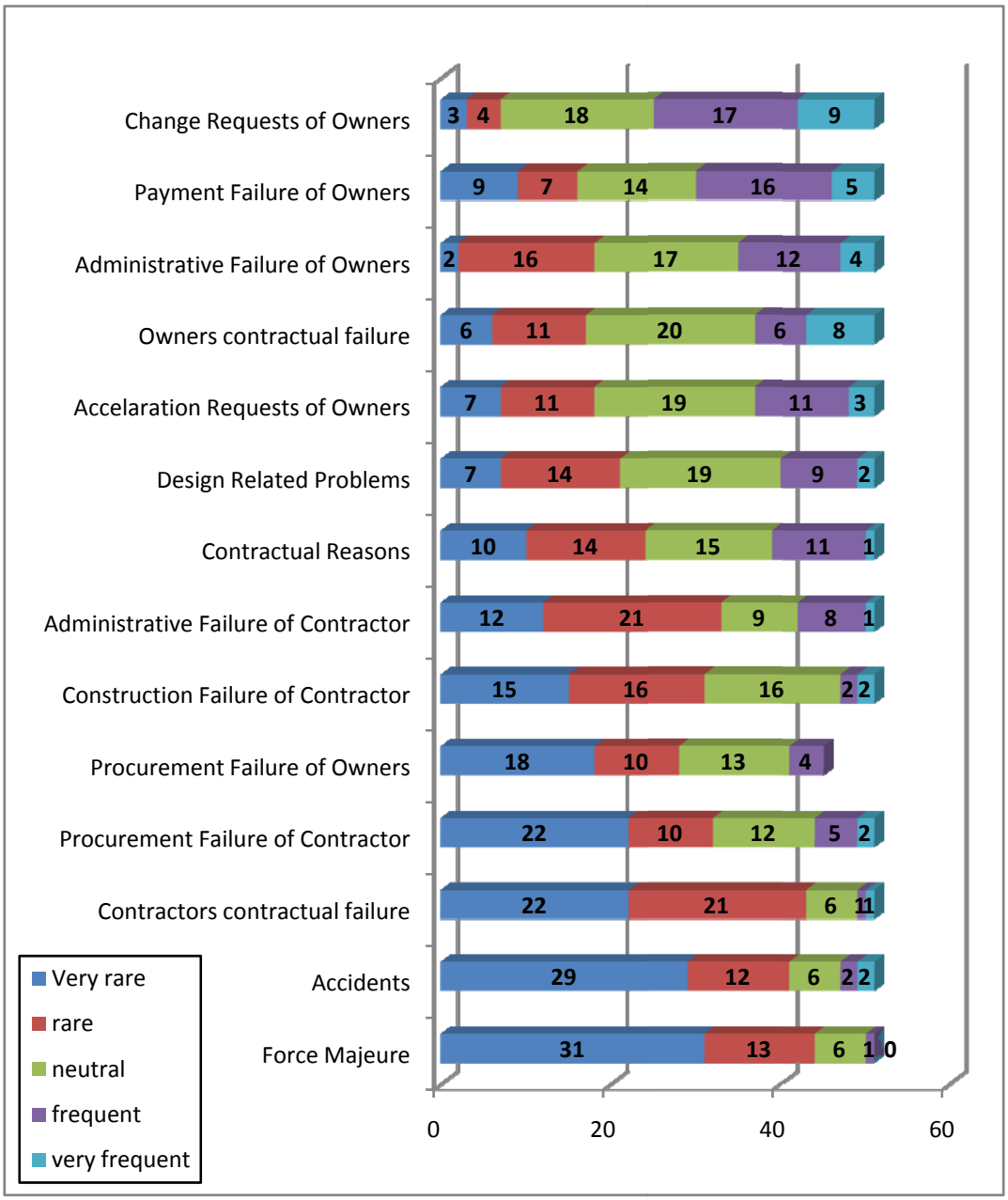
Companies with 10-20 and over 30 years international experience										
	pre-tender process	pre-contract process	contract decision	regular contract	claim decision	claim process	dispute decision	dispute process		
Project Manager	22,2	50,0	44,4	94,4	100,0	100,0	77,8	94,4		72,9
Project Technical Office	11,1	5,6	22,2	83,3	66,7	77,8	38,9	44,4		43,8
Contract Manager	22,2	33,3	33,3	83,3	83,3	88,9	77,8	83,3		63,2
Lawyer(s)	5,6	11,1	22,2	33,3	33,3	27,8	44,4	61,1		29,9
Engineer/Technical Staff	16,7	22,2	11,1	50,0	38,9	44,4	16,7	27,8		28,5
Consultants	5,6	16,7	0,0	16,7	22,2	16,7	27,8	22,2		16,0
	13,9	23,1	22,2	60,2	57,4	59,3	47,2	55,6		42,4

Companies with 20-30 years international experience										
	pre-tender process	pre-contract process	contract decision	regular contract	claim decision	claim process	dispute decision	dispute process		
Project Manager	26,7	26,7	40,0	93,3	93,3	93,3	80,0	80,0		66,7
Project Technical Office	13,3	6,7	6,7	86,7	73,3	73,3	53,3	66,7		47,5
Contract Manager	26,7	26,7	33,3	80,0	66,7	73,3	60,0	73,3		55,0
Lawyer(s)	13,3	20,0	13,3	26,7	33,3	33,3	40,0	53,3		29,2
Engineer/Technical Staff	13,3	6,7	6,7	80,0	40,0	60,0	33,3	60,0		37,5
Consultants	13,3	20,0	13,3	26,7	26,7	33,3	26,7	33,3		24,2
	17,8	17,8	18,9	65,6	55,6	61,1	48,9	61,1		43,3

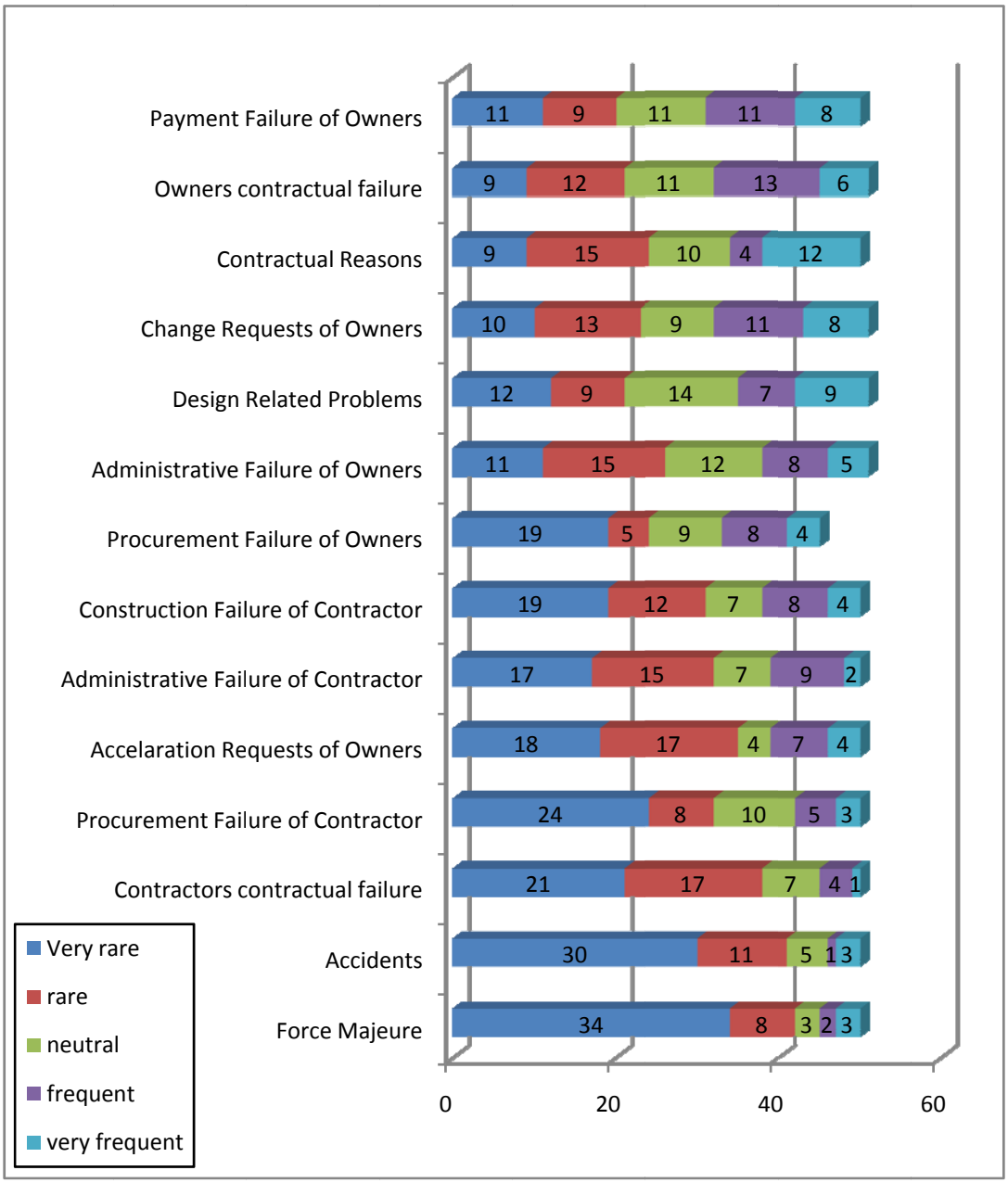
Figure 17 Matrixes at project level for varying international experience

5.3. Claim Issues

This section of the study investigates the causes of the claims, as factors that the Turkish contractors face during execution of their projects. The claims considered in both directions, from contractor to owner, and from owner to contractor. The participants were asked to rate both the frequency for these causes to happen and the frequency that they lead to conflicts once they happen. The factors are gathered from literature as it was noted at section 4.1. The listed factors are; accidents, design errors, owner based reasons, contractor based reasons, contractual reasons like ambiguity or short terms, and force majeure. The owner based reasons listed as; owners' change request, owners' request for acceleration, owners' failure in payments for both short payments and late payments, owners' failure in procurement together with the logistics, owners' failure in contractual obligations like approvals and permissions, and owners' administration failures like intervention to subcontractors. Similarly the contractor based reasons are listed as contractors' failure in construction, contractors' failure in procurement together with logistics, contractors' failure in contractual obligations like use of technology or project organization, and contractors' failure in site administration like lack of management of subcontractors. Three indexes calculated based on the gathered data, which are namely severity, occurrence, and disputing indexes. Occurrence index measures the frequency of these detrimental events that cause to claims, based on the responses illustrated at Graph 35. The conflicting index measures the effect of these events to create a conflict when they happen, based on the responses illustrated at Graph 36. Note that it is not the overall frequency but the frequency based on the impact of the factor. To say for a very frequent event the conflict frequency might be very rare, while for a very rare event the conflict frequency might be very frequent. Finally the severity index is the product of these two indexes and measures the total severity of the factors in conflict creation. Table 38 displays these three indexes.



Graph 35 Frequency of claim causes to happen



Graph 36 Conflicting frequency of claim causes

Table 38 Severity, occurrence, and conflicting indexes for claim causes.

Problem	Rank	Indexes		
		C=A*B Severity of Factor	A Occurrence Index	B Conflicting Index
Change Requests of Owners	Factor 1	29.3	62.3	47.1
Payment Failure of Owners	Factor 2	24.2	50.5	48.0
Owners contractual failure	Factor 3	23.5	49.5	47.5
Administrative Failure of Owners	Factor 4	20.3	50.0	40.7
Design Related Problems	Factor 5	19.7	42.6	46.1
Contractual Reasons	Factor 6	18.9	39.7	47.5
Acceleration Requests of Owners	Factor 7	14.3	46.1	31.0
Administrative Failure of Contractor	Factor 8	10.5	32.8	32.0
Construction Failure of Contractor	Factor 9	10.0	30.4	33.0
Procurement Failure of Owners	Factor 10	9.9	28.3	35.0
Procurement Failure of Contractor	Factor 11	7.7	27.9	27.5
Contractors contractual failure	Factor 12	4.6	19.6	23.5
Accidents	Factor 13	3.4	18.6	18.0
Force Majeure	Factor 14	2.2	13.7	16.0

It can be viewed from Table 38 above that the most severe claim issue that the Turkish contractors complain about is the change requests of the owners. Respondents mostly noted that changes or change orders even they occur very commonly are not the central reason of the conflicts. But it is the unwillingness of the owners to fully recover consequences like duration and cost increases. The second factor is the payment failures of the owners. As payment failures rather than the short payments, the late payments pointed. Many contributors complain about that due to irregular payments of the owners the projects often have cash flow problems, which sometimes can impact the progress. The third ranked factor is the failure of owners in fulfilling their contractual obligations. Under this heading the contractors noted following problems in decreasing order; late approval of the project documentation, deficiencies in arrangement of domestic materials, inefficiency and lateness in visa permissions for project personnel to enter the country, inefficiency and lateness in conducting customs regulations to import materials, and late construction site handovers. For administrative failure of owners, the respondents mostly complain the owners' representatives' irresponsible behaviors like being usually late to the acceptance or testing activities. Design related problems and contractual problems rated similarly. Several contractors noted that design related problems as well as a problem also might be considered to be a trump against the owner to release the pressure on contractor, especially in traditional contracts. For contractual problems, several respondents mentioned that as long as a good relation and communication exist together with a smooth progress it is always easy to agree on what is unclear or absent at the contract and to make an amendment. Also it was noted that contractual problems mostly occur when it is based on an already existing conflict, further triggering it. Contractors mostly considered the acceleration request of the owners as a very fair request if it is due to slow progress of contractor. When they asked to consider the acceleration request beyond a normal progress they noted that in such cases, which are not very often, the main issue for a conflict is not the request but similar to changes it is the deficiencies in recovering the additional

costs. The respondent also noted that, especially for public projects, point accelerations of a few days to complete an activity or some part of the project is very frequent to happen. This is due to the need of the owner's representative to hoodwink the authorities, who wonders about or wants to audit the progress. Many respondents stated that these happens very frequently but do not lead to any problems as they do not cost too much. Moreover it was mentioned that these little shifts, which contractors got used to, also have a positive effect on reputation of the contractor. For all contractor based claim issues, the respondents underlined that as long as they are aware of the fact that the problem is within their liabilities they immediately take the required recovering actions. Thus such claims occur rarely and do not lead to disputes as long as they are fair. The owner procurement failures also considered by several contractors to be an opportunity to release the pressure of the owner on contractor. The accidents and force majeure rated least. It is worth to note that few respondents underlined that force majeure rather than being a problem, a reason for the parties to develop their relation.

Table 39 displays the cross tabulations within the occurrence frequencies of the claim causes. It can be observed that most of the contractor based claim issues are related. In other words the contractors that confront with one of these issues relatively more also susceptible to face with others. It only can be advised to these contractors to revise their behavior and project organizations or improve their constructing abilities. Also owners' contractual, administrative, and procurement failures have relations. This is perhaps due to awkward and slow organizations of especially the public owners, thus contractors working with such owners more commonly rated these three factors. Table 40 displays the cross tabulations within the conflicting frequencies of the claim causes. Comparing the occurrence frequencies there are quit more relations. Among this bunch of relations some look meaningful, while others do not. Only the significant ones will be commented. However all relations are listed for comments of the readers, who perhaps can expressively comment those

relations that could not be commented here. When all the relations checked, three trends attract the attention at the very first glance. First, similar to occurrence relations almost all contractor related claim issues have relations. Second, again similar to occurrence cross tabulations, owners' contractual, administrative, and procurement failures have relations. Considering occurrence relations, which revealed that some same contractors encounter with groups of problems more, it is understandable that these contractors also deal with conflicts more. As a matter of fact the relations between occurrence and conflicting frequencies of these two trends can be observed at Table 41. The third trend is the relations of contractual reasons with many others. When a claim issue arises it is natural that parties refer to contract clauses, which might trigger the issue in case of any shortage or ambiguity. Therefore it is also natural that contractual problems are rated together with other issues.

Table 39 Cross tabulations of frequency of claim causes with each other

Factors		**Gamma**	**Relation**
Construction Failure of Contractor	Procurement Failure of Contractor	0.840	Strong relation
Contractors contractual failure	Administrative Failure of Contractor	0.721	Strong relation
Construction Failure of Contractor	Contractors contractual failure	0.685	Substantial relation
Procurement Failure of Contractor	Administrative Failure of Contractor	0.661	Substantial relation
Construction Failure of Contractor	Administrative Failure of Contractor	0.627	Substantial relation
Owners contractual failure	Administrative Failure of Owners	0.599	Substantial relation
Procurement Failure of Contractor	Contractors contractual failure	0.598	Substantial relation
Administrative Failure of Contractor	Contractual Reasons	0.558	Substantial relation
Procurement Failure of Owners	Owners contractual failure	0.504	Substantial relation
Procurement Failure of Contractor	Contractual Reasons	0.502	Substantial relation

Table 40 Cross tabulations of conflicting frequency of claim causes with each other

Factors		Gamma	Relation
Owners contractual failure	Administrative Failure of Owners	0.887	Strong relation
Construction Failure of Contractor	Procurement Failure of Contractor	0.824	Strong relation
Owners contractual failure	Force Majeure	0.732	Strong relation
Contractors contractual failure	Contractual Reasons	0.725	Strong relation
Contractual Reasons	Force Majeure	0.721	Strong relation
Construction Failure of Contractor	Contractors contractual failure	0.717	Strong relation
Contractors contractual failure	Administrative Failure of Contractor	0.712	Strong relation
Procurement Failure of Contractor	Contractual Reasons	0.711	Strong relation
Procurement Failure of Contractor	Administrative Failure of Contractor	0.699	Substantial relation
Procurement Failure of Owners	Force Majeure	0.677	Substantial relation
Construction Failure of Contractor	Administrative Failure of Contractor	0.675	Substantial relation
Procurement Failure of Contractor	Force Majeure	0.655	Substantial relation
Administrative Failure of Contractor	Contractual Reasons	0.653	Substantial relation
Procurement Failure of Contractor	Contractors contractual failure	0.641	Substantial relation
Procurement Failure of Owners	Administrative Failure of Owners	0.634	Substantial relation
Construction Failure of Contractor	Contractual Reasons	0.626	Substantial relation
Administrative Failure of Owners	Force Majeure	0.625	Substantial relation
Administrative Failure of Owners	Administrative Failure of Contractor	0.622	Substantial relation
Owners contractual failure	Contractual Reasons	0.616	Substantial relation
Administrative Failure of Owners	Contractual Reasons	0.604	Substantial relation

Table 40 Cross tabulations of conflicting frequency of claim causes with each other (continued)

Factors		Gamma	Relation
Administrative Failure of Contractor	Force Majeure	0.592	Substantial relation
Payment Failure of Owners	Force Majeure	0.590	Substantial relation
Payment Failure of Owners	Administrative Failure of Owners	0.587	Substantial relation
Acceleration Requests of Owners	Payment Failure of Owners	0.583	Substantial relation
Design Related Problems	Contractual Reasons	0.570	Substantial relation
Contractors contractual failure	Force Majeure	0.558	Substantial relation
Procurement Failure of Owners	Owners contractual failure	0.551	Substantial relation
Procurement Failure of Contractor	Force Majeure	0.538	Substantial relation
Owners contractual failure	Administrative Failure of Contractor	0.538	Substantial relation
Acceleration Requests of Owners	Administrative Failure of Owners	0.526	Substantial relation
Payment Failure of Owners	Owners contractual failure	0.521	Substantial relation
Design Related Problems	Owners contractual failure	0.515	Substantial relation
Change Requests of Owners	Procurement Failure of Contractor	0.506	Substantial relation

Table 41 Cross tabulations of occurrence frequency and conflicting frequency of claim causes with each other

Occurrence	Conflicting	Gamma	Relation
Procurement Failure of Owners	Procurement Failure of Owners	0.925	Strong relation
Change Requests of Owners	Change Requests of Owners	0.838	Strong relation
Contractors contractual failure	Contractors contractual failure	0.826	Strong relation
Procurement Failure of Contractor	Procurement Failure of Contractor	0.782	Strong relation
Procurement Failure of Contractor	Procurement Failure of Contractor	0.763	Strong relation
Force Majeure	Force Majeure	0.742	Strong relation
Contractual Reasons	Contractual Reasons	0.723	Strong relation
Procurement Failure of Contractor	Procurement Failure of Contractor	0.695	Substantial relation
Contractors contractual failure	Administrative Failure of Contractor	0.674	Substantial relation
Owners contractual failure	Owners contractual failure	0.659	Substantial relation
Contractors contractual failure	Procurement Failure of Contractor	0.648	Substantial relation
Administrative Failure of Contractor	Procurement Failure of Contractor	0.620	Substantial relation
Procurement Failure of Owners	Force Majeure	0.591	Substantial relation
Administrative Failure of Contractor	Contractors contractual failure	0.590	Substantial relation
Contractors contractual failure	Procurement Failure of Contractor	0.588	Substantial relation
Contractors contractual failure	Contractual Reasons	0.579	Substantial relation
Procurement Failure of Owners	Administrative Failure of Owners	0.577	Substantial relation
Contractual Reasons	Procurement Failure of Contractor	0.574	Substantial relation
Accidents	Accidents	0.554	Substantial relation
Procurement Failure of Contractor	Administrative Failure of Contractor	0.537	Substantial relation

Table 41 Cross tabulations of occurrence frequency and conflicting frequency of claim causes with each other (continued)

Occurrence	Conflicting	Gamma	Relation
Administrative Failure of Contractor	Contractual Reasons	0.523	Substantial relation
Owners contractual failure	Administrative Failure of Owners	0.522	Substantial relation
Administrative Failure of Owners	Change Requests of Owners	0.508	Substantial relation
Contractual Reasons	Force Majeure	0.504	Substantial relation
Administrative Failure of Contractor	Administrative Failure of Contractor	0.501	Substantial relation

In addition to internal relations, also relations of these claim issues investigated for other factors; company profiles, company approaches on contract management, the factors that influence the behaviors, the contract management strategies, and company organizations. Table 42 displays relations of frequency of claim issues with such external factors. Those contractors who employ contract managers at site mostly encounter with owners' contractual failure. This is most probably not because of that owner working with these companies more fail in contractual obligations but because that these companies have a predominant control on their contracts. Such a control makes these contractors be more aware of their contractual rights other than those directly influencing their cash flow. A similar comment can also be made for acceleration requests of owners. Those do not employ contract managers on the other hand receive more claims from the owners about contractor's procurement and construction failures. Especially procurement process requires a detailed and comprehensive documentation, which involves many specifications, quality, approval and permission documents. This increase in problems might be due to that without contract managers in this mass of documentation contractors cannot clarify their positions and reserve their rights prior to problems and claims arise about relevant issues. On the contrary another relation shows that those contractors,

who value building up a clear contract, as they can clarify parties' positions and obligations, less suffer from owners' payment failures. The tests revealed several more relations. These relations could not be commented due to limited experience and talents of the author. However these relations also listed in Table 42, with those the author could comment. They are left to the comments of the readers.

Table 42 Cross tabulations of frequency of claim causes with other factors

Factors		**Gamma**	**Relation**
Having contract managers at site	Owners contractual failure	0.901	Strong relation
Not having contract managers at site	Procurement Failure of Contractor	0.650	Substantial relation
Acquiring and recording project data effectively	Payment Failure of Owners	-0.639	Substantial relation
Having contract managers at site	Acceleration Requests of Owners	0.630	Substantial relation
Not having contract managers at site	Construction Failure of Contractor	0.595	Substantial relation
building up a clear contract	Payment Failure of Owners	-0.592	Substantial relation
Impact of type of the owner on behavior	Administrative Failure of Contractor	0.527	Substantial relation
Weight given to contract administration function	Administrative Failure of Contractor	-0.526	Substantial relation
Size of the company	Design Related Problems	-0.526	Substantial relation

Table 43 displays the relations of conflicting influence of claim issues with company profiles, company approaches on contract management, the factors that influence the behaviors, the contract management strategies, and company organizations. Similar to the relations for occurrence rates, acceleration requests of the owners and contractual failures of the owners are more likely to be conflict reasons for those contractors who employ contract managers at

project sites. It was mentioned in the previous paragraph that rather than increase in number this might be due to ability of such contractors to track the non-contractual issues, with the help of their control on contract. A similar comment can be proposed at this point. Such contractors being aware of their rights might be resisting more against owners unfair and non-contractual desires. Contractors do not employ contract managers on the other hand mostly have conflicts due to their procurement failure. A possible effect of unemployment of contract management task on the increase in problems due to procurement process was mentioned at the previous paragraph. This influence, based on the fact that the procurement stage requires a great care in documentation and this is valid for every single item to procure, as well might be valid for increases in conflicts. Supporting this view the relations revealed that as more weight is given to the contract administration function of contract management conflicts due to this reason decreases. Another interesting point is that contractors working for similar owners or at similar countries or projects mostly consider change requests of the owners as a reason to conflict. Considering that these contractors value this strategy in order to be familiar with operations, and thus have a more definite project environment, it is quite understandable that they do not feel comfortable and happy when a change, which forces them to change some of their operations, arises. Two more relations exposed by cross tabulations could not be commented. The impact of 'developing continuous, open communication and mutual goals with other parties' in reducing the conflicts due to force majeure can be referred to effect of communication by some. Such an explanation will be unsatisfactory and insipid. The following question of such a comment will be: "Why than it does not impact all other claim causes?" Moreover, why should those contractors who carefully run the project delivery function of contract management have fewer conflicts due to accidents? These two relations are left to the readers' comments.

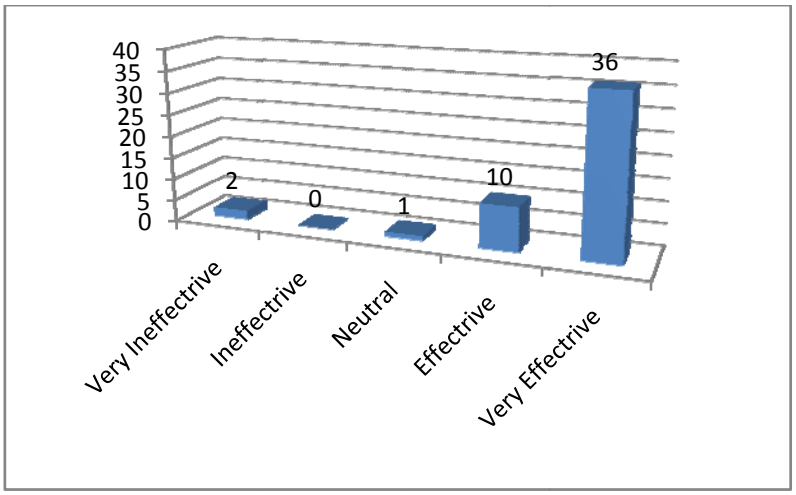
Table 43 Cross tabulations of conflicting frequency of claim causes with other factors

Factors		Gamma	Relation
Having contract managers at site	Acceleration Requests of Owners	0.756	Strong relation
Having contract managers at site	Owners contractual failure	0.673	Substantial relation
Weight given to contract administration function	Procurement Failure of Contractor	-0.607	Substantial relation
Weight given to project delivery function	Accidents	-0.590	Substantial relation
Developing continuous, open communication and mutual goals with other parties	Force Majeure	-0.542	Substantial relation
Working with similar owners, countries, projects	Change Requests of Owners	0.541	Substantial relation
Not having contract managers at site	Procurement Failure of Contractor	0.520	Substantial relation
Having contract managers at site	Payment Failure of Owners	0.500	Substantial relation

5.4. Conflict and Dispute Resolutions

Can contract management reduce the number of conflicts and disputes?

The very last section of the study investigates the conflict and dispute behaviors of Turkish contractors. Contractors first asked whether they believe a successful contract management decreases the numbers of conflicts and disputes or not. As it is illustrated at Graph 37, 46 of the 49 respondents, who replied this question, find contract management significant in reduction of conflicts and disputes that might occur during the project life cycle. The cross tabulations also revealed that those respondents who supports a continuous contract management application and, those respondents who consider contract management to be significant for a company's success in international markets, both value contract management more as a factor which decrease the number of conflicts and disputes. SPSS outputs 21, 22, 23, and 24 displays these strong and substantial relations.



Graph 37 Impact of contract management in reduction of conflicts and disputes

SPSS Output 21 Cross tabulation of contract management application consideration with impact of contract management in reduction of conflicts and disputes

		Impact of contract management in reduction of conflicts and disputes				Total
		1	3	4	5	
Application Consideration	Continuous Application	2	0	6	34	42
	Protective Application	0	1	4	2	7
Total		2	1	10	36	49

SPSS Output 22 Gamma value for cross tabulation of contract management application consideration with impact of contract management in reduction of conflicts and disputes

		Value	Asymp. Std. Error(a)	Approx. T(b)	Approx. Sig.
Ordinal by Ordinal	Gamma	-.743	.154	-2.168	.030
N of Valid Cases		49			

SPSS Output 23 Cross tabulation of impacts of contract management in company success and reduction of conflicts and disputes

		Impact of contract management in reduction of conflicts and disputes				Total
		1	3	4	5	
Impact of contract management in company success	3	1	0	0	0	1
	4	0	0	3	3	6
	5	1	1	7	33	42
Total		2	1	10	36	49

SPSS Output 24 Gamma value for cross tabulation of impacts of contract management in company success and reduction of conflicts and disputes

		Value	Asymp. Std. Error(a)	Approx. T(b)	Approx. Sig.
Ordinal by Ordinal	Gamma	.631	.222	1.591	.112
N of Valid Cases		49			

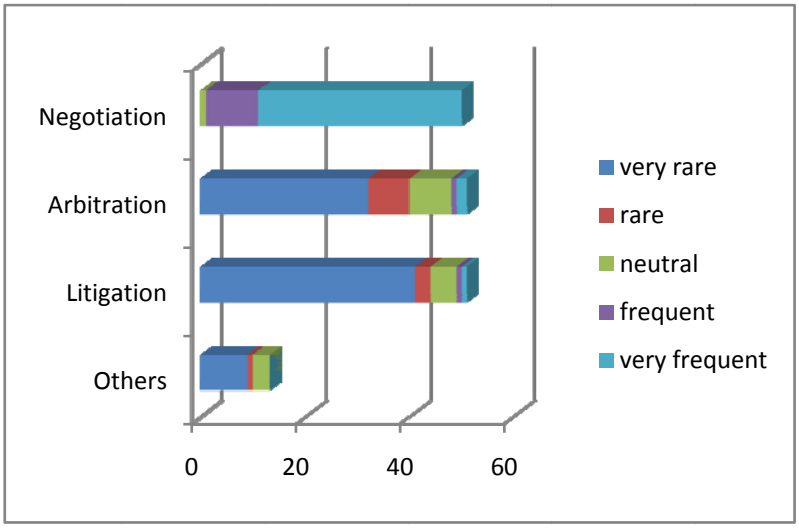
Use of different resolution methods

The respondents were also asked to rate the employment of different resolution methods during their companies' conflict and dispute processes. Table 45 and Graph 38 illustrate the responses. 49 of 50 respondents replying for negotiation stated that they solve their problems commonly by means of negotiation. On the other hand those contractors employ arbitration or litigation often for resolutions are only 3 and 2 respectively. 40 of 51 contributors stated that they seldom apply to arbitration, and 44 of 51 stated that they hardly ever resort to courts. The others option, which also includes alternative dispute resolution methods, rated by only 13 respondents and not a single one of these rated it to be often. The rest of the respondents stated that they have never employed alternative dispute resolution methods. A few of the 13 contractors, who

applied other methods, noted that they rate the option considering top management level meetings between the parties.

Table 44 Preferences on dispute resolution methods

	very rare	rare	neutral	frequent	very frequent
Negotiation	0	0	1	10	39
Arbitration	32	8	8	1	2
Litigation	41	3	5	1	1
Others	9	1	3	0	0



Graph 38 Preferences on dispute resolution methods

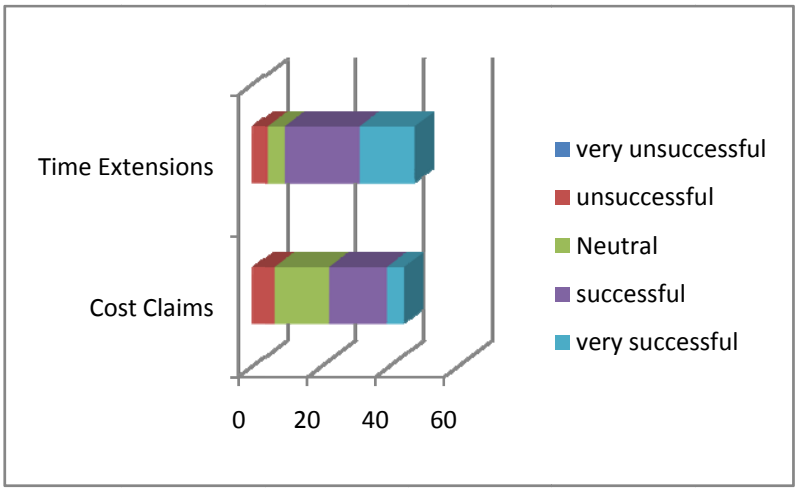
Are the contractors successful in resolutions?

As the very last question the participants were requested to rate the success of their companies in acquiring time extensions and cost claims for each type of resolutions they employ. Most of the respondents replied this question only for negotiation. Table 46 and Graph 39 illustrate the results for success in negotiations. For time extensions; 38 of the companies and for cost claims 22 of the companies called to be successful in negotiations by the respondents. 4

respondents rated their companies to be unsuccessful in achieving time extensions via negotiations. 6 on the other hand rated their companies to be unsuccessful in acquiring cost claims. Table 47 and Graph 40 demonstrate responses for resolutions other than negotiation. For resolutions by arbitration 6 and 7 respondents called their companies to be successful in winning time extensions and cost claims respectively, while for both 3 of the respondents rated companies to be unsuccessful. The rates decline dramatically for litigation. For both type of claims only 2 contractors rated to be successful in litigations. For time extensions 9 and for cost claims 8 contractors rated to be unsuccessful at courts.

Table 45 Success in negotiations for time extensions and cost claims

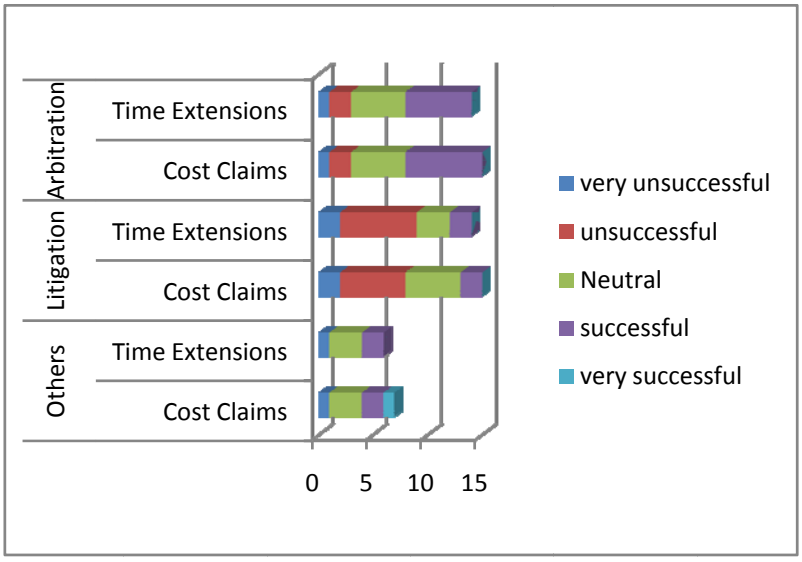
	very un-successful	Un-successful	Neutral	successful	very successful
Time Extensions	0	4	5	22	16
Cost Claims	0	6	16	17	5



Graph 39 Success in negotiations for time extensions and cost claims

Table 46 Success in arbitrations, litigations and other resolution methods for time extensions and cost claims

		very un-successful	Un-successful	Neutral	successful	very successful
Arbitra-tion	**Time Extensions**	1	2	5	6	0
	Cost Claims	1	2	5	7	0
Litiga-tion	**Time Extensions**	2	7	3	2	0
	Cost Claims	2	6	5	2	0
Others	**Time Extensions**	1	0	3	2	0
	Cost Claims	1	0	3	2	1



Graph 40 Success in arbitrations, litigations and other resolution methods for time extensions and cost claims

In order to find factors influencing the success cross tabulations tested between success in time and cost claim negotiations and company profiles, company approaches on contract management, the factors that influence the behaviors, the contract management strategies, company organizations and the occurrence and conflicting frequency of claim causes. The only relation found is that those companies who consider claim negotiation as a contract management strategy are more successful in negotiation of cost claims. SPSS output 25 and SPSS output 26 illustrates this self explanatory relation. Success in negotiation of time and cost claims also compared with project organizations and contributions of different parties to different contract management processes. This is done by SAS software and Anova and Duncan tests on the procedures introduced at section 5.2 of this study. The analysis revealed that at the project level contract management the different grouping of both contribution of departments and contribution to processes impact the success in negotiation for only cost claims. Those companies, who called themselves to be very successful, those companies, who called themselves to be successful, and those companies, who called themselves not to be successful in cost claim negotiations displays three different distributions of project personnel to contract management. On the other dimension of the contribution matrix those companies, who called themselves unsuccessful and those companies, who called themselves not unsuccessful displays two different contributions to processes. Shortly the project organization has an impact on negotiation success for cost claims. However as it was mentioned at section 5.2, unfortunately this study is not able to address how this impact happens. In other words this study cannot argue how the contribution of which party to which process affects the success in which direction. This investigation is left to a further study.

SPSS Output 25 Cross tabulation between the weight given to claim negotiation and success in cost claim negotiations

		Success in cost claim negotiations				Total
		2	3	4	5	
Weight given to claim negotiation	3	2	0	0	0	2
	4	3	4	6	0	13
	5	1	12	11	5	29
Total		6	16	17	5	44

SPSS Output 26 Gamma value for cross tabulation between the weight given to claim negotiation and success in cost claim negotiations

		Value	Asymp. Std. Error(a)	Approx. T(b)	Approx. Sig.
Ordinal by Ordinal	Gamma	.512	.195	2.211	.027
N of Valid Cases		44			

5.5. Summary of Findings and Discussions

The survey results revealed that Turkish contractors consider contract management to be significant for success at international markets, as their experience in international markets increases. Turkish contractors are also well aware of the need for a continuous contract management application even though this rate cannot be achieved in current application. Among its 3 functions the relationship management function of the contract management is the function that most weight is given by firms in current application. On the contrary the least weight is given to the administration of the contract function. However as the companies consider activities of the contract administration function as key factors for contract management, it can be claimed that this is a

reflection of high awareness and the willingness to fill the gaps between the weights given to the functions. Considering awareness as a driving factor for improvement it can be estimated that in near future Turkish contractors will be managing their contracts in more efficient, organized and systematic ways than they do today.

The contract management behavior of Turkish contractors most impacted by risk and complexity of the project, and three owner related factors; country of the project or country of the owner, relations with the owner, and type of the owner. These factors lead contractors to change their behaviors, and emphasis on application of contract management. Even though the country of the owner does not lead to a significant difference in behavior for private owners, for public owners the country changes the contractors' behaviors significantly. Contractors give more emphasis on contract management while they are working for owners from EU countries, USA and other countries with tight laws and regulations. One interesting result is that while the contractors are working for owners from Turkey they give little emphasis to contract management. From this perspective Turkey is one of the countries that least rated. This most probably is due to a trauma, which is originated from their former experiences in Turkey that they were used to work for Turkish public owners who are traditionally decisive and unquestionable.

When the key factors for success or in other words the contract management strategies are concerned, contractors mostly value the actions taken during the regular contract process. Following pre-tender and pre-contract processes rated. These three processes are called to be processes that impact the whole success of the project. Claim and dispute processes however considered to be significant only when potential losses are of issue. According to results companies employing contract managers at project sites consider claim process to be significant for the success of the project. The reason for this finding might be that as these companies have more contractual control on construction

progress they feel more comfortable in claim process and manage claims more effectively.

Among regular contract process strategies four activities of contract administration function rated as the most important key factors for success. As previously noted although the least weight in current application is given to the administration of the contract function, this result is a reflection of high awareness of its importance and the willingness to fill the gaps between the weights given to the functions. These four activities rated most are; instant recording of changes, appropriate and on time data gathering together with an efficient documentation and record system, recording any kind of communication, and continuous contract administration based on knowledge to the contract. This result also uncovers the emphasis given to the importance of documentation and record keeping.

Among pre-tender process strategies complete and comprehensive examination of tender documents and determination of potential risks rated to be more important strategies. However although it was ranked first, most contractors confessed that they are not able to evaluate the tender documents satisfactorily. The reason for this circumstance is given as the workloads of the tendering departments. As a result of this situation the tender departments mostly focus on technical and commercial documents leaving administrative ones behind.

For pre-contract process, ensuring the clarity of the contract is rated as the most important strategy for success. Although it is almost impossible to negotiate contract terms for public projects this activity is rated to the second rank.

For claim process the respondents were presented elements of a formal claim process framework together with some other activities. All activities required for a systematic claim process rated more than other activities. This shows that Turkish contractors are well aware of importance of chasing their money in an environment where profits rates are declining every day. These elements of the framework are; identification of the claim, notification of the claim, examination

of the claim, documentation of the claim, presentation of the claim and negotiation of the claim. The notification of the claim, duration of which is generally limited by the contract, naturally rated as the most important activity of the claim process. Moreover, excluding the negotiation of the claim, all other elements of the claim process have strong relations, which means that rather than evaluating individually the contractors consider these activities as a pack together. The negotiation, which different that other activities, is dependent on talents of the negotiator rather than techniques and regarded separately most probably due to its nature.

In case of disputes contractors mostly concerned with the speed of the resolution, this is followed by the manageability of the resolution. The bindingness of the resolution is the third key factor in dispute process. This indicates that rather than non-binding alternative dispute resolution methods contractors prefer arbitration and litigation. The manageability of the resolution is also a factor in this preference. Contractors do not prefer these methods because as well as methods are not binding contractors also are not familiar with them. When arbitration and litigation are considered, since speed of the resolution is voted as the most important strategy, it can be argued that arbitration is more desired than the litigation. As a matter of fact, at the last part of the study, it is found that arbitration is the most consulted resolution method following the negotiation.

It was found that Turkish contractors, with a great majority assign contract management task to either individuals or groups at both corporate and project management levels. This means that the relevant personnel clearly requested to conduct contract management functions. However these personnel not necessarily employed for this task. Several companies assign this task to personnel already employed with other tasks. The groups listed in the project organization charts were also investigated for their contributions to the contract management processes and decisions. Not surprisingly, the contract management activities are mostly carried out at the corporate level before the

contract and at project level after this point. The biggest responsibility regarding the contract management, especially for critical decisions, rather than contract managers is still at project managers and top management of the company. The survey revealed that the international experience of company and existence of contract administration department both have an influence on participation of different company or project groups to different contract management processes and decisions.

When claim issues are investigated for their severity, as a product of occurrence and conflicting frequencies, it was found that the most severe claim issues are change requests, payment failures, and contractual failures of the owners. The change requests are not at the heart of the conflict but the owners' denial of consequences of changes is. It was found that the weight given to the contract administration function of contract management and employing contract managers at site has an influence in reduction of claim issues regarding contractors' procurement failures. Considering that numerous parties are involved in procurement stage and it requires vast amount of documentation such a relation is not surprising. The contractors, those rated factors caused by owners' awkward and slow organizations such as contractual, administrative, and procurement failures, are found to be similar. Knowing that such organizations are mostly public organizations it was mentioned that these contractors might be those who works for public owners. However because the contractors were not asked for their owner types such a comment could not be proved.

Turkish contractors with a great majority believe that contract management is effective in reducing the numbers of conflicts and disputes. Contractors very often employ negotiation to solve their disputes and mostly consider themselves as successful in negotiation for time extensions. In resolutions with negotiations for cost claims, they also consider themselves as successful with a decreasing rate. They rarely apply to arbitration and litigation, and almost never apply alternative dispute resolution methods.

CHAPTER 6

CONCLUSION

This thesis study focused on investigating contract management behavior of Turkish construction companies in international projects. International project limitation used in order to be able to explore the behavior at the projects where Turkish contractors compete against global construction players with all means of engineering and management requirements. International project concept of the study covers the projects that the country of the project or at least one of the parties, the owner (or the representative), the partners, or other contractors is/are not turkey or turkey oriented. Those projects constructed in Turkey with foreign partners, or constructed overseas with Turk partners are count to be international projects. A second limitation used due to wide scope is the investigation of only the contract management behavior of contractors on contracts with the owners. Their behavior on contracts with other parties like partners or subcontractors is left to further researchers.

The literature, especially the literature out of Turkey, contains numerous works that involves a survey study regarding specific or focused topics of contract management, such as impact of contract types or clauses, claim issues, and delay

reasons. However through literature survey, a study which investigated the overall contract management behavior could not be found. Therefore, especially for Turkey, this study may be called to be the first which treats contract management as whole. The contract management term proposed for this study is defined as follows:

"Contract management starts with the contract formation negotiations, lasts until the end of the contract, and is the process that covers three fundamental functions required to compensate the goals of the contracted project.

- **Relationship Management:** To provide an agreement between the parties in sharing and fulfilling the obligations and to adjust the relationship in between.
- **Project Delivery:** To ensure that the maintenance of the obligations and the completion of project targets are as in the contract.
- **Administration of the contract:** To perform contractual bureaucratic procedure. (Recording, preparation of forms, communication, etc.)

Exact understanding, fulfillment and control of contract clauses, settling and recording the changes that may arise during application, minimization of risk by foreseeing of future needs and development of appropriate strategies in case of unexpected situations are all involved in this process."

The evolution of contract management investigated through literature survey, and it was argued that contract management is naturally emerged; it was not developed, and introduced as a management practice from some source but changing business environment force, those for who contracting is a part of their business, to evolve and involve in such a practice. Therefore, for any business who makes contracts as a part of its trade, the question is not whether they apply contract management or not, but is whether they can successfully adopt themselves to this new business way or not.

In order to be able to investigate the contract management behavior of Turkish contractors a survey is composed and interviewed with sector professionals. Survey is based on a wide questionnaire, which treat contract management with its many more specific topics. The major factors that shaped the questionnaire design were the need to do a comprehensive survey and contradictory with it the need to keep it as short as possible. To overcome this dilemma it was chosen to use closed end questions. For any question and option presented at the questionnaire the background gathered from various sources like previous academic surveys or studies, and the Turkish sector analyzed through TCA publications to correlate these sources with their reflections in current Turkish contracting sector. As the survey method rather than resorting to hundreds of companies via mails and trusting fate for kindness of respondents it was decided to chose the right and representative small number of companies and resort them with references for face to face interviews. By doing so three major advantages achieved; first the responses on determined sample was ensured, second the study did not limited with the survey and everything that the respondents would like to share gathered, and finally it was ensured that the respondent has understood the purpose of the research and the questions. In order to decide the sample companies a detailed research done and over 300 firms searched through the World Wide Web and websites for over 200 firms visited. As a result of this detailed research, total 63 companies were chosen to be targets, and 51 of these 63 target companies participated to the survey. Gathered raw data, finally converted to information by means of statistics software, applications, and techniques.

In order to give the reader, the opportunity to justify the survey results after having an understanding about the topic, at this documentation of the thesis, before presenting the survey results, the concept of the contract management intensely presented as a whole, and it was tried to answer the question: “what is contract management?” This is done via a comprehensive presentation of literature, on three functions of contract management, which are relationship

management, the project delivery, and the contract administration. Considering behavior is just the physical reflection of mental actions or reactions without knowing its origin or the mental source the knowledge on the behavior would be somehow incomplete. Therefore together with contract management concept, knowledge on the Turkish construction sector and its interaction with contract management, as well presented. Here it was noted that Turkish contractors, in time, gained experience in international markets, and in a changing environment where high competition pushes the profit rates down for everybody, they further adopt themselves to the changing environment and achieved success with their ability to complete their contracts which requires formal, systematic and organized means of processing. However it is bitter that beside their all success there is still doubts and lack of trust on Turkish construction sector in Turkey. Worse still, this is lack of confidence also exist within the sector.

The survey results revealed that Turkish contractors consider contract management to be significant for success at international markets, as their experience in international markets increases. Turkish contractors are also well aware of the need for a continuous contract management application even though this rate cannot be achieved in current application. Considering awareness as a driving factor for improvement it can be estimated that in near future Turkish contractors will be managing their contracts in more efficient, organized and systematic ways than they do today. Currently Turkish contractors more value the relationship management function of contract management and less care on contract administration function.

The contract management behavior of Turkish contractors most impacted by risk and complexity of the project, and three owner related factors; country of the project or country of the owner, relations with the owner, and type of the owner. These factors lead contractors to change their behaviors, and emphasis on application of contract management. The country of the project influences the behavior mostly by the tightness of laws and regulations of the country. The

contractors most focus on contract management during the projects in EU countries or when they are employed by owners from these countries. It is sad that Turkey from this perspective only rated to be the second last, before Afghanistan and Iraq, where currently war is going on.

When the key factors for success or the contract management strategies are concerned, contractors mostly value the actions taken during the regular contract process. Following pre-tender and pre-contract processes rated. Claim and dispute processes however considered to be significant only when potential losses are of issue. Respondents evaluated three most important factors at regular contract process as; instant recording of changes, appropriate and on time data gathering together with an efficient documentation and record system, and recording any kind of communication. This proves their high awareness on the need for recording and documentation, which replaces with the trust based on oral communication. Among pre-tender process strategies complete and comprehensive examination of tender documents and determination of potential risks rated to be more important strategies. However although it was ranked first, most contractors confessed that they are not able to evaluate the tender documents satisfactorily. For pre-contract process ensuring the clarity of the contract and negotiation of contract terms were ranked as first two. It was also underlined however that especially for public projects it is almost impossible to negotiate contract terms. For claim process all activities required for a systematic solution rated more than strategies comparatively more informal. This shows that Turkish contractors are well aware of importance of chasing their money in an environment where profits rates are declining every day. Contractors mostly concerned with the speed and manageability of the resolution when a dispute happens, and consider these two attributes as key factors for success.

It was found that Turkish contractors, with a great majority assign contract management task to either individuals or groups at both corporate and project management levels. This means that the relevant personnel clearly requested to

conduct contract management functions. However these personnel not necessarily employed for this task. Several companies assign this task to personnel already employed with other tasks. The groups listed in the project organization charts were also investigated for their contributions to the contract management processes and decisions. It was found that the companies those have contract management departments and the companies those employ individuals for this task display different contribution matrixes at both corporate and project levels. It was also found that the contribution of different project teams in contract management process differs with international experience of the companies.

As a product of occurrence and conflicting frequencies, the contractors consider the most severe claim issues as change requests, payment failures, and contractual failures of the owners. It was suggested that the change requests are not at the heart of the conflict but the owners' denial of consequences of changes is. It was found that the weight given to the contract administration function of contract management and employing contract managers at site has an influence in reduction of claim issues regarding contractors' procurement failures. Considering that numerous parties are involved in procurement stage and it requires vast amount of documentation such a relation is not surprising. The contractors, those rated factors caused by owners' awkward and slow organizations such as contractual, administrative, and procurement failures, are found to be similar. Knowing that such organizations are mostly public organizations it was mentioned that these contractors might be those who works for public owners. However because the contractors were not asked for their owner types such a comment could not be proved.

The study revealed that Turkish contractors with a great majority believe that contract management is effective in reducing the numbers of conflicts and disputes. Contractors very often employ negotiation to solve their disputes and mostly consider themselves as successful in negotiation. They rarely apply to arbitration and litigation, and almost never apply alternative dispute resolution

methods. The success rate decreases for these resolution methods. It was found that the variations in contribution of different project groups in contract management processes has an impact on success of resolutions for conflicts based on cost issues.

This study investigates the contract management behavior of the companies as a whole. Similar studies might be conducted by further researchers, to investigate the behavior on more specific issues regarding the contract management topic.

- For example similar surveys those investigating behavior and strategies deeply and in more detail for each contract management process would reveal further results.
- The business history and culture of Turkish contractors and its effects on their contract management behavior might be another interesting issue to do further research on it.
- The contract management organizations of the contractors also require further investigation. It was mentioned that the effects of contributions of different groups to contract management processes only could be found to exist. However their influences could not be revealed. Further it was mentioned that due to lack of abilities of the statistics team the proposed existence of effects, as well as they might be so, still do not promise to be identical with results of a more strong analysis. Therefore the contract management organizations of Turkish contractors still mostly uncovered.
- Furthermore the most severe claim issues listed here can be treated by researchers together with their remedies, which are applicable and suitable for company cultures.
- Total quality management applications within the corporate body might be argued to influence contract management behaviors and success. Such an argument seems to worth exploring.

- There are several studies focused on effects of contract clauses and different types of contracts on project success (Sertyesilisik, 2006; Usta, 2005). However there is no such study that investigates the impact of contract law on application of these contract types and clauses. Laws of different countries interpret these clauses in a different way leading enforcement variations. A study on this subject might help Turkish contractors to understand their contracts more accurately.
- This investigation was held only for the contracts between the owners and the contractors in other words the upstream contracts. As previously mentioned in any project, besides the one with the owner, there might exist many other contracts for a contractor and these downstream contracts signed with partners, subcontractors, and suppliers are as well of significance and require an effective management in order to achieve the success for the project. Researchers might find it worthwhile to do similar investigations on downstream contracts.
- Finally it should be noted that this investigation reflects only the contractors' view on their behavior therefore may include some bias depending on how transparent and objective can the contractors be. A comparision might be obtained via similar study on Turkish contractors' contract management behavior, which is surveyed among other parties such as employers or subcontractors.

Beside these research topics directly related to thesis subject, several other issues, those might be studied are as follows. These are study topics that the author thought that it would be helpful for this thesis if they had been previously researched.

- As mentioned before in Turkey a doubt and lack of trust exist at perspectives on Turkish contractors. The question is whether it is

also valid in international markets or not. Moreover even it is not so this circumstance still might influence the perception of related global groups as they contact with Turkish parties to have some information about sector in Turkey. Considering the significant share of trust in contract management, it might worth to study this circumstance together with its reasons and solutions.

- It was mentioned that the remote management nature of construction sector raises the concept of virtual teams. A research on the impact of virtual teams on contract management and any other subject regarding the project management might be of value.

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APPENDIX A

QUESTIONNAIRE

This appendix includes the English version of the original Turkish questionnaire used for the survey. With the 1 page cover that introduces the scope of the survey it is total 11 pages, and the required time to reply all the questions within the questionnaire is around 35 minutes.

Scope of the Survey

This survey is developed concurrent to the master's thesis "The Contract Management Behaviors of Turkish Construction Companies at International Projects" which is under preparation at Construction Management Division of Civil Engineering Department of Middle East Technical University.

Contracts are written documents that legally bind the signing parties and digest responsibilities and relations between them. Due to complex nature of construction projects, contractors, as they contract, undertake projects with risks accompanied to them. Therefore there is always the need for elaborate contracts; that treat any consequences commercially and technically in detail and that adjust behaviors of the parties.

Because one of the functions of the contracts is adjusting the behaviors of parties, contracts are thought to have a cruel effect on projects success.

The aim of the study is to investigate the approach of Turkish construction companies on contract management concept and their contract management applications at international projects.

The content of the word "contract" that will be encountered frequently in this study covers; the main contract with it is annexes and amendments, the technical and commercial documents, all kinds of forms and documents which are obligatory for work coordination and the communication records.

In this study, international project concept covers the projects that the country of the project or at least one of the parties, the owner (or the representative), the partners, or other contractors is/are not turkey or turkey oriented. Those projects constructed in Turkey with foreign partners, or constructed overseas with Turk partners are count to be international projects.

Any information provided from participators on behalf of their companies will stay confidential will be used only for academic purposes.

We would like to thank for your time (despite your packed schedules) and your contribution in our study.

Alper YİĞİT, Graduate Student

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1) Company Profile

A) For how many years, is your company active in construction sector? _____ Years.

B) For how many years, is your company active in international construction market? _____ Years.

C) Considering Turkish construction sector and other competitors, indicate the size of your company.

☐ Small ☐ Small-Medium ☐ Medium ☐ Medium-Large ☐ Large

2) Contract Management (CM)

Contract management starts with the contract formation negotiations and lasts until the end of the contract, and is the process that covers 3 fundamental functions required to compensate the goals of the contracted project.

1. To provide an agreement between the parties in sharing and fulfilling the obligations and to adjust the relationship in between.
2. To ensure that the maintenance of the obligations and the completion of project targets are as in the contract.
3. To perform contractual bureaucratic procedure. (Recording, preparation of forms, communication, etc.)

Exact understanding, fulfillment and control of contract clauses, settling and recording the changes that may arise during application, minimization of risk by foreseeing of future needs and development of appropriate strategies in case of unexpected situations are involved in this process.

A) What is the impact of CM for the success of a construction company in the international market? Evaluate in "1 very unimportant – 5 very important" scale

① ② ③ ④ ⑤

B) Considering 3 basic functions of CM and business practice of your company please rate the weight given to these functions in "1 very unimportant – 5 very important" scale

- To provide an agreement between the parties in sharing and fulfilling the obligations and to adjust the relationship in between.

  ① ② ③ ④ ⑤

- To ensure that the maintenance of the obligations and the completion of project targets are as in the contract.

  ① ② ③ ④ ⑤

- To perform contractual bureaucratic procedure. (Recording, preparation of forms, communication, etc.)

  ① ② ③ ④ ⑤

C) Select the opinion which reflects your personal perspective on CM best. (Please select only 1 option)

- ☐ CM must be applied in every stage of cooperation. (Continuous Application)
- ☐ CM must be applied in order to avoid problems in cooperation. (Protective Application)
- ☐ CM must be applied when a problem arise in cooperation. (Claim Management)
- ☐ CM is an inapplicable academic management theory.

D) Select the answer which reflects the practical CM application in your company best. (Please select only 1 option)

- ☐ CM is applied in every stage of cooperation. (Continuous Application)
- ☐ CM is applied in order to avoid problems in cooperation. (Protective Application)
- ☐ CM is applied when a problem arise in cooperation. (Claim Management)
- ☐ There is no current CM application.

E) Considering the above given CM definition, evaluate the effect of below factors over your companies emphasis on CM and attention to its application in "1 very unimportant– 5 very important" scale.

E-1) Risk/complexity of the project

① ② ③ ④ ⑤

E-2) Duration of the project

① ② ③ ④ ⑤

E-3) Country of the project or country of the owner

① ② ③ ④ ⑤

E-4) Relations with the owner (more personal or more formal relations)

① ② ③ ④ ⑤

E-5) Type of owner (public or private owner)

① ② ③ ④ ⑤

E-6) Contract type (Lump sum, unit price or cost-plus)

① ② ③ ④ ⑤

E-7) Delivery Method (Construction, Design-Built, EPC or BOT)

① ② ③ ④ ⑤

E-8) Nationalities of the project partners

① ② ③ ④ ⑤

F) Below are the sub-factors for 4 of the factors given at the previous question. Considering these sub-factors, evaluate your companies emphasis on CM and attention to its application in "1 very unimportant– 5 very important" scale.

F-1) Country of the project or the owner

EU	①	②	③	④	⑤
Afghanistan, Iraq	①	②	③	④	⑤
Arabian Countries (UAE, Qatar, etc.)	①	②	③	④	⑤
Arabian Countries (Yemen, Libya, etc.	①	②	③	④	⑤
Former Soviet (Russia, Ukraine)	①	②	③	④	⑤
Turkic Republics	①	②	③	④	⑤
Turkey	①	②	③	④	⑤
Other	①	②	③	④	⑤

F-2) Management Type

Public	①	②	③	④	⑤
Private	①	②	③	④	⑤

F-3) Contract Type

Lump Sum	①	②	③	④	⑤
Unit Price	①	②	③	④	⑤
Cost Plus	①	②	③	④	⑤

F-4) Delivery Method

Construction	①	②	③	④	⑤
Design - Build	①	②	③	④	⑤
Engineering Procurment Construction – Turnkey	①	②	③	④	⑤
Built Operate Transfer	①	②	③	④	⑤

G) Below are some strategies for different contract stages, evaluate effects of these strategies over a company's success in "1 very unimportant – 5 very important "scale. Please state any unlisted strategies.

G-1) Pre-tender process (Strategic planning and project selection)

G-1-1) Working with owners that a long time relationship and a mutual trust exists

① ② ③ ④ ⑤

G-1-2) Working with identical owners or countries or at identical projects

① ② ③ ④ ⑤

G-1-3) Complete and comprehensive examination of tender documents

① ② ③ ④ ⑤

G-1-4) Determination of potential risks

① ② ③ ④ ⑤

G-1-5) Evaluation of all perspectives of the project at different departments

① ② ③ ④ ⑤

G-1-6) Other _____

① ② ③ ④ ⑤

G-2) Pre-contract process (Preparation of contract after the award)

G-2-1) Having detailed definition for obligations of the parties and goals of the project

① ② ③ ④ ⑤

G-2-2) Analyzing the contract risks in detail

① ② ③ ④ ⑤

G-2-3) Negotiating for contract clauses

① ② ③ ④ ⑤

G-2-4) Building a rigid contract that defines and settles any possible outcomes

① ② ③ ④ ⑤

G-2-5) Other _____

① ② ③ ④ ⑤

G-3) Regular Contract Process (Construction)

G-3-1) Having a continuous, clear and transparent communication with other parties, developing mutual targets and understanding

① ② ③ ④ ⑤

G-3-2) Developing personal relations with other parties and keeping personal communication strong

① ② ③ ④ ⑤

G-3-3) Recording any kind of communication (Meetings, correspondence, conversations)

① ② ③ ④ ⑤

G-3-4) Appropriate and on time data gathering and developing an efficient documentation and record system

① ② ③ ④ ⑤

G-3-5) Instant recording of changes

① ② ③ ④ ⑤

G-3-6) Continuous and comprehensive CM application, and knowledge to contract

① ② ③ ④ ⑤

G-3-7) Continuous monitoring and management of possible risks

① ② ③ ④ ⑤

G-3-8) Other _____

① ② ③ ④ ⑤

G-4) Claim process (Preparation and claiming)

G-4-1) On time and accurate determination of claim. (claim identification)

① ② ③ ④ ⑤

G-4-2) On time notification of the other party (claim notification)

① ② ③ ④ ⑤

G-4-3)Determination of legal and concrete basis of claim and accurate calculation of potential correction cost by using related techniques. (claim examination)

① ② ③ ④ ⑤

G-4-4) Presentation of all documentation and evidences of claim history. (claim documentation)

① ② ③ ④ ⑤

G-4-5) Presentation of claim by a well structured organization (claim presentation)

① ② ③ ④ ⑤

G-4-6) Effective negotiation of claim (claim negotiation)

① ② ③ ④ ⑤

G-4-7) Handling claims with personal relations

① ② ③ ④ ⑤

G-4-8) Preventing from disputes

① ② ③ ④ ⑤

G-4-9) Other_____

① ② ③ ④ ⑤

G-5) Dispute Process

G-5-1) Consideration of speed in dispute resolution

① ② ③ ④ ⑤

G-5-2) Consideration of bindingness of the decision

① ② ③ ④ ⑤

G-5-3) Consideration of economy in dispute resolution

① ② ③ ④ ⑤

G-5-4) Consideration of manageability of the process

① ② ③ ④ ⑤

G-5-5) The preservation of the relation

① ② ③ ④ ⑤

G-5-6) Other _____

① ② ③ ④ ⑤

H) Evaluate the effect of strategies applied during contract stages over the company's success in "1 very unimportant – 5 very important "scale.

Pre-tender Process	①	②	③	④	⑤
Pre-Contract Process	①	②	③	④	⑤
Regular Contract Process	①	②	③	④	⑤
Claim Process	①	②	③	④	⑤
Dispute Process	①	②	③	④	⑤

3) Contract Management Organization of the Company

A) Within the company organization, are there any contract management department (CMD) or individual employees that are responsible with contract management process

- ☐ There is a CMD appointed to this task
- ☐ There is no CMD but there are individual employees appointed to this task
- ☐ There is neither a CDM nor individual employees appointed to this task

B) Within your company project organizations, are there any employees that are responsible from CM process?

- ☐ There are individual employees appointed to this task
- ☐ There are no employees appointed to this task

C) Indicate individuals/departments who participate in different CM processes condacted at the company headquarter (or main branch offices). For each process mark individuals/departments who contribute to that process

	Pre-Tender Process	*Pre-Contract Process*	*Contarct Decision*	*Regular Contract Process*	*Claim Decision*	*Demand Process*	*Dispute Decision*	*During Conflict*
Top Management	☐	☐	☐	☐	☐	☐	☐	☐
Strategical Planning Department	☐	☐	☐	☐	☐	☐	☐	☐
Contract Department	☐	☐	☐	☐	☐	☐	☐	☐
Legal Departmant	☐	☐	☐	☐	☐	☐	☐	☐
Tender Department	☐	☐	☐	☐	☐	☐	☐	☐
Planning/Cost Control Departmant	☐	☐	☐	☐	☐	☐	☐	☐
Finance Department	☐	☐	☐	☐	☐	☐	☐	☐
Consultants	☐	☐	☐	☐	☐	☐	☐	☐
Other	☐	☐	☐	☐	☐	☐	☐	☐

D) Indicate individuals/groups who participate in different CM processes conducted at the project organizations. For each process mark individuals/groups who contribute to that process

	Pre-Tender Process	Pre-Contract Process	Contarct Decision	Regular Contract Process	Claim Decision	Demand Process	Dispute Decision	During Conflict
Project Manager	☐	☐	☐	☐	☐	☐	☐	☐
roject Tecnical Office	☐	☐	☐	☐	☐	☐	☐	☐
Contract Manager	☐	☐	☐	☐	☐	☐	☐	☐
Lawyer(s)	☐	☐	☐	☐	☐	☐	☐	☐
Engineer/ Techical Staff	☐	☐	☐	☐	☐	☐	☐	☐
Consultants	☐	☐	☐	☐	☐	☐	☐	☐
Other	☐	☐	☐	☐	☐	☐	☐	☐

4) Claims

A) Considering the international projects of your company, evaluate the claim issues given below;

A-1) For occurrence frequency in "1 very rare – 5 very often" scale

A-2) For conflicting frequency when they occur in "1 very rare – 5 very often" scale

	Occurance Frequency					Conflicting Frequency				
Accidents	①	②	③	④	⑤	①	②	③	④	⑤
Design Related Problems	①	②	③	④	⑤	①	②	③	④	⑤
Change Requests of Owners	①	②	③	④	⑤	①	②	③	④	⑤
Accelaration Requests of Owners	①	②	③	④	⑤	①	②	③	④	⑤
Payment Failure of Owners	①	②	③	④	⑤	①	②	③	④	⑤
Purchasing Failure of Owners	①	②	③	④	⑤	①	②	③	④	⑤
Owners failure in fullfiling contractual duties	①	②	③	④	⑤	①	②	③	④	⑤
Administrative Failure of Owners	①	②	③	④	⑤	①	②	③	④	⑤
Construction Failure of Contractor	①	②	③	④	⑤	①	②	③	④	⑤
Purchasing Failure of Contractor	①	②	③	④	⑤	①	②	③	④	⑤
Contractors failure in fullfiling contractual duties	①	②	③	④	⑤	①	②	③	④	⑤
Administrative Failure of Contractor	①	②	③	④	⑤	①	②	③	④	⑤
Contractual Reasons	①	②	③	④	⑤	①	②	③	④	⑤
Force Majeure	①	②	③	④	⑤	①	②	③	④	⑤
Other	①	②	③	④	⑤	①	②	③	④	⑤

5) Disputes and Solutions

A) How effective is a successful CM to reduce the conflicts between the parties? "1 very ineffective – 5 very effective". Please evaluate in this scale

① ② ③ ④ ⑤

B) Considering the conflicts occurred at the international projects that your company performed, please evaluate the methods applied in order to solve the conflicts according to usage frequency in "1 very rare – 5 very often" scale.

Negotiaiton	①	②	③	④	⑤
Arbitration	①	②	③	④	⑤
Litigation	①	②	③	④	⑤
Other	①	②	③	④	⑤

C) Considering the disputes and solutions that your company came across in the international projects, point out the rate of time extensions and costs that you win and time extensions and costs demanded at the beginning in percentage. Evaluate your success according to these acquisitions in "1 very unsuccessful – 5 very successful scale. .

C-1) Solutions reached by negotiaiton

	Percentage Achieved		Success Degree				
Extention of Time	%	☐	①	②	③	④	⑤
Cost Claim	%	☐	①	②	③	④	⑤

C-2) Solutions reached by arbitraton

	Percentage Achieved		Success Degree				
Extention of Time	%	☐	①	②	③	④	⑤
Cost Claim	%	☐	①	②	③	④	⑤

C-3) Solutions reached by litigation

	Percentage Achieved		Success Degree				
Extention of Time	%	☐	①	②	③	④	⑤
Cost Claim	%	☐	①	②	③	④	⑤

C-4) Solutions reached by other ways

	Percentage Achieved		Success Degree				
Extention of Time	%	☐	①	②	③	④	⑤
Cost Claim	%	☐	①	②	③	④	⑤