

**EVALUATION OF THE SUBCONTRACTING SYSTEM IN TURKEY**

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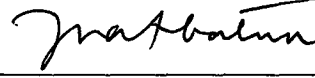
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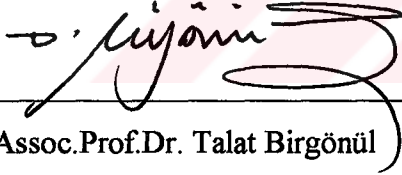
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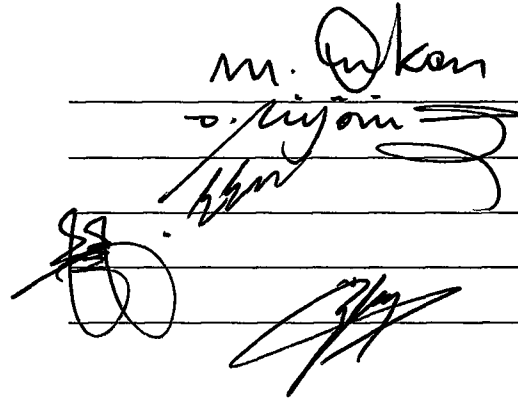
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## **ABSTRACT**

### **EVALUATION OF THE SUBCONTRACTING SYSTEM IN TURKEY**

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Subcontracting is the fundamental element of the Turkish construction sector as it is in all other countries. The aim of this thesis is to provide an insight view about the subcontracting system and the subcontractors in Turkey. The study is based on the data gathered by the personal interviews that are held with the general contractors and by the survey that is conducted among the subcontractors. No specific region in Turkey is selected for the survey. Both of the methods used in this research aim to specify the applications of the system and to outline the relationship between the parties. The conclusions are derived according to the viewpoints of the two parties, namely the subcontractors and the general contractors. As a result, it is found out that most of the subcontractors in Turkey are not highly specialized. This is one of the disadvantages encountered in the system because working with unspecialized companies leads to lower quality standards in the executed

works. Most of the subcontracting companies in Turkey prefer to undertake projects as general contractors. Higher profit margin, and being in direct relation with the owner/client are the governing factors in making this preference. It is also found out that the subcontracting system in Turkey is highly based on the personal relationship between the parties. Mutual trust and having worked together previously are the effective factors that are taken into account for the subcontract awarding practices. On the other hand, it is observed that the widely usage of oral agreements constitutes one of the important reasons for having legal disputes encountered during the project life. It has been further concluded that the subcontracting system in Turkey must be restructured in order to achieve a more specialized and experienced profile of the employed subcontractors.

**Keywords:** Subcontracting, Subcontractors, General Contractors, Subcontract Awarding

**ÖZ**

**TÜRKİYE'DEKİ TAŞERONLUK SİSTEMİNİN  
DEĞERLENDİRİLMESİ**

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Taşeronluk sistemi, diğer bütün dünya ülkelerinde olduğu gibi, Türk İnşaat Sektöründe de vazgeçilmez temel bir unsurdur. Bu tezin amacı, Türkiye'deki taşeronluk sistemi ile taşeron firmalar hakkında detaylı bir inceleme yapmaktır. Gerçekleştirilen çalışma, müteahhit firmalarla yapılan karşılıklı görüşmeler ve taşeron firmalara uygulanan anketler sonucunda elde edilen verilere dayanmaktadır. Anket çalışması için Türkiye'de herhangi bir bölge özel olarak seçilmemiştir. Kullanılan her iki yöntemin, sistem içindeki uygulamaları belirlemesi ve taraflar arasındaki ilişkileri tanımlaması amaçlanmıştır. Sonuçlar, her iki tarafın (müteahhit ve taşeron firma) görüşleri dikkate alınarak elde edilmiştir. Türkiye'deki taşeron firmaların yeterli derecede uzmanlık alanlarına sahip olmadığı bu çalışma sonucunda elde edilen sonuçlar arasında yer almaktadır. Bu durum sistem içinde karşılaşılabilecek

önemli olumsuzluklardan biridir, çünkü sistem içinde yeterli sayıda uzman firmayla çalışılmaması yapılan işlerin düşük kalitede olmasına yol açmaktadır. Türkiye'deki taşeron şirketlerin çoğu, yüksek kar oranları ve işveren ile birebir ilişki içinde olabilme isteği sebeplerinden dolayı projelerde müteahhit firma olarak çalışmayı tercih etmektedir. Elde edilen başka bir önemli sonuç ise, Türk Taşeronluk Sisteminin çoğunlukla kişisel ilişkiler üzerine kurulmuş olmasıdır. Taraflar arasındaki karşılıklı güven ve şirketlerin daha önceden beraber çalışmış olmaları taşeron seçimi aşamasında önemli rol oynamaktadır. Diğer yandan, bu ilişkilerin yol açtığı sözlü anlaşmaların kullanılması proje süresince karşılaşılabilecek sorunların sebeplerinden biri olmaktadır. Sonuç olarak sistem içindeki taşeronların daha uzman ve tecrübeli bir profile sahip olabilmeleri için Türkiye'deki Taşeronluk Sisteminin yeniden yapılması gerekmektedir.

**Anahtar Kelimeler:** Taşeronluk, Taşeron firmalar, Müteahhitler, Taşeron seçimi

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## **CHAPTER I**

### **INTRODUCTION**

Subcontracting can be accepted as the basic element of the construction industry in Turkey like in all other countries. In a construction project it is probable that much of the actual work is subcontracted. Although the concept of subcontracting shows similarity among different countries, the applications and the procedures involved in the system may have some variations. The subcontractor selection criteria, relationship between the parties of the system, subcontract awarding methods, and owner/client responsibilities are some examples of the subjects that may vary. The type of the sector (as private or public) for which the construction project is handled may also affect the applications in the subcontracting system. If the owner (client) is an agent of the Government, the procedures that are utilized in the stages of the contracting and subcontracting systems differ.

Subcontracting system involves different stages such as bidding, subcontractor selection, awarding and forming of subcontracts, and construction of the actual project works, each of which have special characteristics. The procedures that take place in these stages must be clearly explained in order to analyze this system. The purpose of this exploratory study is to gain some insight about the subcontracting system applications and the subcontracting companies in Turkey. The research that will be made by the help of a questionnaire is thought as the most suitable method for deriving reliable conclusions. If this study had been based only on a questionnaire that

would be distributed to the subcontractors, the system would have been analyzed by using one of the parties' viewpoints. Adequate description of the system is achieved only if the current situation is analyzed from the two parties' viewpoint involved in the system. That is the most important reason for making personal interviews with the general contractors. These interviews eliminate the disadvantages that can be encountered by the usage of a single party in system description.

Throughout the thesis, data obtained from the questionnaires are given and their results are discussed in accordance with the personal interviews. Chapter II gives a general definition of the subcontracting system. Furthermore, the reasons of subcontracting, responsibilities of the parties involved in the system and the risk allocation process are explained in this chapter by taking the general concept of subcontracting into account. Chapter III gives the general definition of the subcontracting system stages such as subcontractor selection and subcontract awarding in accordance with the applications in Turkey. Chapter IV defines the research methodology used in this thesis. In Chapter V and VI, the data obtained with the help of the interviews and the survey is outlined. In Chapter V, the system is described from the contractor's viewpoint by using the interview results. In Chapter VI, detailed statistics about the questions that are used in the questionnaires are given and the results are compared for each subcontractor work group involved in the research.

Within this research, Turkish contracting and subcontracting systems are not compared with the systems utilized in other countries. It is aimed to analyze the subcontracting system by taking both parties' (subcontractor and general contractor) viewpoints into consideration. In the thesis, the words of general contractor and contractor are used interchangeably to represent the party who subcontracts some portions of the work. Although

owner (client) is not accepted as a separate party in subcontracting system, working relationship of this party with the subcontractors are also described in Chapter V.





## **CHAPTER II**

### **SUBCONTRACTING IN GENERAL TERMS**

#### **2.1 Introduction**

Subcontractors have an important role in construction industry. On many projects, particularly in building projects, 80-90% of the whole work is subcontracted. In spite of their vital role in subcontracting system, nothing much is known about the working relationship that exists between the parties of the system. This chapter describes the system by analyzing the reasons of subcontracting and by considering the risk sharing between the parties.

#### **2.2 The Construction Process**

Construction is essentially a service industry, whose responsibility is to convert the plans and specifications prepared by an engineer or an architect into a finished project. The construction operation is any of the various actions required for constructing the project. It includes the planning of site activities and the execution of the works on site. Great number of different operations is required in the production of structures within the construction process. The construction of projects involves many details and relationships among owners (clients), architects, engineers, general contractors, specialty contractors, manufacturers, material dealers, equipment distributors, labour, governmental

bodies and agencies. The modern site is therefore a collection of different organizations, each with their own task and company philosophy brought together in a combination, which is probably unique to that situation.

Construction process includes all the activities that take place between the recognition of the need for a facility and the owners' acceptance of the completed facility. The major steps in this process are given as follows:

- \* project definition
- \* preliminary design and feasibility studies
- \* project design and engineering
- \* procurement of major items
- \* project construction
- \* project start-up

### **2.3 Subcontracting System and Its Parties**

In all of the significant World markets, there is extensive use of subcontracting throughout all stages and levels of a project. Subcontracting can be defined as sub-letting some portions of the work in the total project. It is also used as a device for contractually transferring legal, financial and operational responsibilities from the general contractor to the subcontractor. Subcontracting consists of one party selecting another party to perform and be fully responsible for a specific portion of the work required by the general contract.

In construction process, builders who supervise the execution of projects may be classified as *General Contractors* and *Specialty Contractors*.

General contractor is the business firm that is in contract with the owner (client) for the construction of the project. Its function includes close management control of the construction process and coordination of all tasks in a project. The general contractor will construct certain portions of the job with its own forces and subcontract the remainder to various specialty contractors. These portions' type and amount may vary depending on the nature of the project and their own organization. When general contractor subcontracts a portion of the work, this contractor remains legally and financially bound to the owner (client) for the full scope of the work. Therefore the general contractors' role is certainly critical, particularly in contractual, financial and administrative matters.

Specialty contractors limit their operations to one or more construction specialties; such as electrical, heating and ventilating, excavation, and so on. They are often engaged by general contractors to perform specific phases of a construction project. Since specialty contractors are operating under a subcontract between themselves and general contractors, they are referred as a *subcontractor*. Subcontractors are dependent on all others involved in the construction process, but all other participants are also dependent on subcontractors because they can dictate the success or failure of the project. Thus subcontractors can be defined as a potent force that directly shapes the entire construction industry.

The managerial abilities and activities of the general contractor are major variables in the fortunes of subcontractors. The general contractor affects the subcontractor primarily during the construction process as he puts together the team of subcontractors prior to that process. That effect plays upon the efficiency of the subcontractor during the construction process, the profitability of the subcontractor at the end of that process, and how the subcontractors evaluate general contractors in bidding to become part of that process.

During the construction process, contractors must become sympathetic to the needs of the subcontractors. Only when the general contractor has ensured that the subcontractor has all the information and resources he needs, can he criticize the subcontractor. Subcontractors are contractually bound to the general contractor but at the same time must perform their work to the satisfaction of an owner (client) with whom they have no direct contractual relationship. The general contractor has also responsibility for ensuring that his subcontractors are working safely. Safety responsibilities of the parties should be clearly defined in the regulations to reflect closely the site situation of multiple responsibility.

#### **2.4 Reasons of Subcontracting**

Subcontracting is the integral part of the construction process. Most of the actual work of construction is carried out not by the general contractors which undertake to do it but by other firms which specialize in particular aspects of the work. General contractors prefer to subcontract the portions of the work for several reasons. Some of important reasons of subcontracting are listed below.

- The most common reason that can be listed for subcontracting is not having in-house capability for work. The lack of skill and expertise necessary to perform a particular part of the work makes the contractors to decide for subcontracting.
- By subcontracting, the general contractor can obtain workers with the necessary skills when they are needed. Thus, the necessity of

maintaining an inefficient full-time labour force is completely eliminated.

- By subcontracting some portions of the project, contractors aim to avoid being overextended.
- The use of subcontractors on construction projects is preferred in order to promote greater productivity and economical efficiency.
- In many cases for which the general contractor does not have the necessary equipment, it is preferable to subcontract that part of the project rather than attempt to acquire the necessary equipment.
- By subcontracting, the general contractors transfer some of the risks of the project to their subcontractors. Although this may not be a definite reason for subcontracting, it is probably one of the most important results achieved by this system.

## **2.5 Risk Sharing in Subcontracting**

### **2.5.1 Considering Risks in Subcontracting**

From beginning to end, the construction process is complex and characterized by many uncertainties. The process is subject to the influence of highly variable and unpredictable factors. Risk is seen and understood as the possibility of gain or loss during the course of a project. Both controllable and uncontrollable risks are important on construction projects (Flanagan, 1993). Controllable risks reflect management and effective performance.

Uncontrollable risks include such factors as severe weather conditions, the effects of inflation on costs, or ground conditions on a particular site. Contractors and subcontractors generally have no difficulty in accepting the risks for controllable events.

Risk is the exposure to possible economic gain or loss. The fundamental risks in construction projects are apportioned between the client, the design team, the general contractor, the subcontractor, and the material suppliers with various contractual relationships. Typical risks that may be encountered on a construction project are commonly related with the items listed below (Flanagan, 1993).

- \* adequacy of design,
- \* cost of construction,
- \* safety in all accidents,
- \* completion deadlines,
- \* quality of workmanship and materials,
- \* latent defects arising as a result of bad workmanship, faulty materials and poor specification.

In most situations the effect of adverse events will be financial loss. So the risk that is most concerned with when choosing the contract type is financial risk. Lack of attention to risk at the preparation stage of contracts can produce very unpleasant surprises that can lead to later dispute. If allowances made by subcontractors for the uncertainties are inadequate, the occurred loss of profit may lead to a decline in productivity and possible decrease of quality standards.

### **2.5.2 Risk Allocation**

Risk in construction projects is allocated from owner (client) to designers and contractors, and from contractors to subcontractors. The construction contract (or subcontract) is a method used for allocating risks. The purpose of the contracts and the subcontracts is to establish the rights, duties, obligations, and responsibilities of the parties and to allocate the risk between them. There are standard forms of subcontracts that are used for the general contractor and subcontractor contractual arrangements.

Formulating the contract (and the subcontract) in detail requires the identification of specific risks and the determination of how the risks will be shared between the parties. Risk sharing becomes impossible when one party of the contract attempts to transfer the majority of the risk to the other party through one-sided contract language. As more risk is passed to the subcontractor, the contractor is at greater risk if the subcontractors fail. Risks associated with subcontract conditions are likely to increase the owner's (client's) and the contractor's risk.

Risks are allocated differently in "cost-based" and in "price-based" subcontracts (Hayes, 1986). Price-based subcontracts include fixed price and unit price subcontracts. Payment is based on the prices or rates submitted by the subcontractor in his tender. These subcontracts require the subcontractor to carry a greater portion of risks than cost-based ones. In "cost-based" subcontracts, the contractor assumes greater degree of risk. Before tendering, the subcontractor should estimate the costs of risks that will be carried and include them in tender price or rates in the form of a hidden risk contingency. This contingency may cover the risk of rising costs such as for material and labour. Another method of protecting the subcontractor from these risks is to insist on clause in the subcontract that if the work is delayed through no fault of

the subcontractor, the general contractor will be responsible for the cost escalations caused by any delays in the work.

Because of the nature of the construction industry, it is very unlikely that the work performed by the subcontractors will be paid for before the owner (client) pays the general contractor. For this reason, “pay when paid” system is the most frequently used method in subcontracting. The most important purpose of a “pay when paid” provision is to protect the main contractor’s cash flow. The exposure to risk is most severe under “pay when paid” conditions which provides for a payment to be made to a subcontractor only when the general contractor secures payment from the client.

The general contractor may require subcontractors to provide securities in order to protect itself against subcontractor debt and default. Although these securities will afford the general contractor some measure of protection against financial loss, it does not and cannot cover all the expenses caused by work stoppages, delays and disruptions of the overall construction program that result from subcontractor default.



## **CHAPTER III**

### **SUBCONTRACT AWARDING**

#### **3.1 Introduction**

The working relationship between the subcontractors and general contractors begins to take shape during the bidding and awarding periods. Subcontract awarding can be defined as the method or stages used to select the subcontractor. Selection of the proper subcontract type and the subcontractor appropriate to the situation is an important decision to be made prior to the construction period. Before using subcontracting for the construction of a proposed project, the contractor must understand the characteristics of the project and use the appropriate subcontracting method. Selection of subcontract type and definition of risk responsibilities of the parties are some basic items in this subcontract design. A fairly designed and administered subcontract is a catalyst for good subcontractor performance.

#### **3.2 The Nature of Contracts and Subcontracts**

A *contract* is the agreement between the owner (client), or owner's agent and the general contractor. It is the starting point for construction operations and remains the basis for the development and use of all construction related works. They should be an easily understandable, mutually agreed upon

document that provides the answer to every project contingency. Contracts are worded in such way that there are no meanings left for “in-between-the-lines” definition. Every word in a contract is put there for a specific reason and has a logical meaning. A contract will not be binding on the parties unless its terms are definite enough to permit a third party looking at the contract to be able to determine what had been agreed. The general contractor, by the terms of its contract, assumes complete responsibility for the direction and control of the entire construction program. An important part of this responsibility is coordinating and supervising the work of subcontractors.

When the general contractor engages a specialty firm to execute a particular portion of the overall construction program, the two parties enter into an agreement called a *subcontract*. A subcontract is therefore the agreement under which the subcontractor agrees to perform a certain specialized part of the work. The smooth execution of subcontracts is the key to the successful completion of construction process. The subcontract must, in its form and content, bind the subcontractor to general contractor to certain obligations that exist within the scope of the general contractor-owner agreement. Furthermore, the subcontract must give the general contractor the necessary control and protection to achieve completion of the work on time and at the agreed price.

Subcontract is an important and generally quite extensive document which allocates risks, states the rights and responsibilities of contractual parties and include a full description and the extent of work, timing, quality standards and the price. The subcontract must satisfy the normal requirements of establishing a basic contractual relationship between the parties. Some of the general terms that are outlined in subcontracts can be listed as follows (Maher, 1982):

- \* work scope definition

- \* time and schedule requirements
- \* terms of payment between contractor and subcontractor
- \* communications
- \* work quality
- \* security deposits
- \* delays and cost of delays
- \* cancellation of subcontract
- \* changes
- \* clean up responsibilities
- \* labour disputes of subcontractor
- \* damage to others
- \* safety

Main contract and the subcontract are regarded as the links in a chain. Each contract is direct legal concern of those who are its parties. Thus, the main contract affects only the owner (client) and the general contractor where the subcontract affects only the general contractor and the subcontractor.

Although the parties of the agreement prepare the construction contract, namely the owner (client) and the general contractor, it is only the contractor's responsibility to prepare the subcontract documents. General contractors prefer to use mainly their own documents for subcontracting. This puts the subcontractor at a disadvantage because subcontracts are written for the protection and advantage of the general contractor. When subcontractors enter agreements with general contractors, they seem to accept this disadvantage. Failure to accept the terms of subcontract prepared by the general contractor will result in the selection of another subcontractor who is willing to

accept these terms. Subcontracting is initiated by the general contractor who normally negotiates from a position of strength. The subcontractor cannot fight back for all the inequities that he experiences, because general contractor may be the customer on the next job.

The general contractor and the subcontractor simply have to establish that the intentions of one party are consistent with the expectations of the other. Any differences must be resolved prior to entering a formal agreement if work is to progress smoothly. The general contractor should also take steps to protect himself against later claims made by the subcontractor.

### **3.3 Bidding and Subcontractor Selection Process**

Profit is an obvious and principal motive for bidding on a construction contract. General contractors bid competitively to owners (clients) for the whole project and subcontractors bid competitively to general contractors for their own trade on the project. Early in the bidding period the contractor will usually mail out bid invitations to all material suppliers and subcontractors that are believed to be interested and whose bids would be desirable. Contractors regularly maintain a card or computerized file that lists addresses and other information about material suppliers and subcontractors. A general contractor has a group of subcontractors from each trade in whom he has confidence and on whom he can depend to perform the work in an efficient and quick manner. It is known that each of these subcontractors is mechanically capable to perform the work, and has the required administrative capability. These are the subcontractors from whom the bids are taken.

Subcontract awarding process starts after the analysis of the bids. The lowest bid price is determined in relation to its responsiveness, completeness, price, and conditions after all the bids are examined and compared. Negotiations with the determined low bidding subcontractors are undertaken prior to the subcontract formation.

In bidding process, the lowest bid price is not necessarily the best submit because selecting the subcontractor on price alone has led to some trouble. The general contractor must consider, in addition to initial cost, the subcontractor's honesty, organization, financial strength, equipment and reputation for getting the job done. Some of the criteria used for subcontractor selection are listed below:

- \* previous performance
- \* location
- \* financial measures
- \* technical capabilities
- \* project teams' expertise

After the subcontractor is given the job, the relationship turns to negotiating. The subcontractor must constantly negotiate with the general contractor or his representative during the life of the job. If subcontracts are awarded without any formal discussion taking place between the contractor and the subcontractor, the probability of conflict that may occur after construction work has begun increases.

In competitive biddings, the prices charged by different subcontractors will differ for a number of reasons. Some of these common reasons are listed below (Stone, 1976):

- \* Some of the subcontractors will be more anxious for the subcontract than others because of work shortage, or of prestige purposes, and hence they will consider it worthwhile to accept only a small contribution to their profits from the job in question.
- \* The lower quality standards of completed work cause the price difference between the subcontracting firms.
- \* The difference in efficiency causes the difference in costs of the subcontractors.

Particular attention should be given to the number of subcontractors who are to become involved in the project. The greater the number of subcontractors appointed, the greater the number of interfaces to be controlled by general contractors.

### **3.4 Types of Subcontracts**

The types of construction subcontracts are generally based on the ways in which the subcontractor is paid for the performed work. This classification involves three types; unit price, lump sum and cost reimbursement.

*Unit price* subcontracts are based on measuring the actual quantity of the work carried out. This work is valued by applying the rates quoted in subcontractor's tender. Final subcontract sum is not known until the work has been completed. Such subcontracts are used if the total work amount is not clearly known at the tender stage. Risk of not knowing the subcontract sum is a disadvantage that must be considered for these types of subcontracts.

*Lump sum* subcontracts are the ones in which the subcontract sum is fixed and agreed before the construction work starts. Payment made to subcontractors may be phased throughout the stages of the work. These types of subcontracts have the advantage of knowing the overall price for the contractors. But if changes take place in work scope or unforeseen difficulties arise during the work period, disputes over payment will occur. This is the common disadvantage of this type of subcontract.

*Cost reimbursement* subcontracts involve the total actual costs of materials, plant and labour and a previously agreed fee to cover profit and office overheads. This type of subcontracts has a great degree of flexibility so the extent of the works to be carried out can be easily changed. The simplest form of this type of subcontract is “cost plus fee” where the fee is calculated as a percentage on the costs of the work. This form provides a direct encouragement to inefficiency, since the higher the costs of the work, the greater the fee. The cost reimbursement subcontracts have another disadvantage that it is sometimes difficult to impose a ceiling on the amount of money to be spent. This requires considerable control in supervising and recording of the expenditures.

Another classification of subcontracts can be made by reference to the kind of work which they involve (Murdoch, 1992). At one end of spectrum, there are subcontracts that are awarded for the supply of materials only. At the other end, there exists “labour only” subcontracts in which material of any kind is supplied to the subcontractor. Between these two extremes there exists many subcontracts involving the supply of both labour and materials. What kind of the subcontract will be used (such as unit price, lump sum or cost reimbursement) is mainly affected by the work items that are subcontracted. The preferred subcontract type generally differs for “labour only” and “material plus labour” type of subcontracts.

**CHAPTER IV**

**ANALYSIS METHOD OF**

**TURKISH SUBCONTRACTING SYSTEM**

**4.1 Introduction**

In order to derive a reliable conclusion about the subcontracting system in Turkey, it is important to state general contractors' and subcontractors' viewpoints related with the subject. Within this thesis, the main research methodology chosen for analyzing the subcontracting system is a questionnaire prepared for subcontractors. Personal interviews were held with well-known contractor firms located in Ankara in order to describe the general contractors' common opinion about the subcontracting applications in Turkey. General contractor company number used for interviews is limited when compared with the subcontractor number used for the survey because interviews are done only for stating some general points in the system. Consistency between the results of the interviews was useful in defining the subcontracting system. Answers given to the interview questions also helped to shape the structure of the questionnaire.

The questionnaires used in this research are not directly mailed to subcontractors but instead distributed by the help of their general contractors. This survey is aimed to base on subcontractors who are taxpayers and have legal obligations like preparing invoices and paying tax stoppages. As it is



believed that these kinds of properties of subcontractors are best known by contractor firms, this way of questionnaire distribution is preferred. This is the main reason for using the contractors as a step for the communication between the researcher and the subcontractors. The second reason for using this step is to be able to collect the answered questionnaires from the subcontractors in the possible shortest time because the contractors have great influence on their subcontractors.

General contractors, to which these questionnaires were sent, are mostly located in Ankara. As it is obvious, firms having head offices in Ankara have many projects in other cities and other countries so; because of the usage of this distribution system, it is impossible to generalize the location of the subcontractors who answered this questionnaire.

For gathering data in this survey, 220 questionnaires were distributed to subcontractors and 133 of them returned back. None of them were mailed but instead delivered to each company personally. Most of the answers were collected in the same way where only small portions of the answered questionnaires were returned back by mail. Original copy of the questionnaire is given in Appendix.

#### **4.2 Structure of the Questionnaire**

The questionnaire consists of 27 questions most of which are multiple choice and rating scale type close-ended ones. The number of open ended type questions is limited by 6 on purpose because this form of answers can not be used to generalise the situation. 13 of the questions are multiple-choice and the others are rating scale type. In multiple-choice questions, the

respondents are required to select the most appropriate alternative that best suits the company's situation. In rating scale type of questions, a scale from 1-5 is used where "1" means "very important" and "5" means "worthless". A different scale is used only in Question 25 where, scale "1" means "strongly disagree" and "5" means "strongly agree". The respondents were asked to choose a number on this scale in order to represent their assessment about the given items. An "Other" choice is added to most of the closed-ended questions to allow the respondents to answer other than the given alternatives. Answers written under this "Other" choice are evaluated separately from the other alternatives and are not shown in the result tables.

The first 8 questions in the questionnaire aim to describe the general characteristics of the respondent companies such as their type, capacity, age, and work items. Following questions narrow down the scope in order to obtain more specific answers about the system and about the subcontractors' viewpoint. The statistical package program SPSS (Statistical Package for Social Sciences) is used to evaluate and analyze this questionnaire.

## **CHAPTER V**

### **INTERVIEW RESULTS**

#### **5.1 Introduction**

Within this chapter, the questions used in the interviews and the corresponding answers taken from the general contractors are given. In order to get a general information about the subcontracting system in Turkey, interviews were held with 15 well-known general contractors. The aim of this chapter is to present the common viewpoint of contractors about the applications in the subcontracting system. In section 5.2, the results of these interviews are given.

#### **5.2 Questions and The Answers of General Contractors**

Each general contractor responds 13 questions, all of which are related with the properties of the subcontracting system. The answers taken from each question are summarised below.

**Question 1:** What is the reason of using subcontractors in projects?

- General contractors prefer to limit themselves to a few activities and let outside specialists, or subcontractors, handle with the rest. By this way, they try to minimize the cost of employing permanent personnel. As subcontractors have all the technical personnel and the equipment necessary for that specific activity of the project,

they have the chance of completing their work with minimum cost. Thus, contractors prefer to employ subcontractors instead of forming an in-house organization for that activity.

- Companies believe that working with experienced subcontractors who have technical capability improves the quality of the project.
- Working with specialists also shortens the duration of the project.

**Question 2:** What kinds of work items are subcontracted? Under which conditions it is preferable to supply material to subcontractors?

- Subcontractors can be used in all type of works. The subcontracted work items may change for every project. Although no specific portion of the project is chosen for subcontracting by general contractors, concrete/formwork/reinforcement, electrical, mechanical, sanitary, plastering works are some of the main work groups that are generally subcontracted.
- Usage of “labour only” type of subcontracts is not usually preferred by subcontractors because related expenditures cannot be entered into financial accounts and this situation leads to higher tax payments. Consequently, subcontractors favour to work with “labour plus material” type of subcontracts. However, contractors prefer to supply necessary materials to subcontractors in order to assure the quality of the completed works. Especially work items related with laying out, such as ceramic tiling and floor covering, are subcontracted with “labour only” type of subcontracts. If subcontractors make the material selection, contractors must organize proper quality controls.

- Some work items in construction projects cannot be subcontracted with a “labour only” type of subcontract. Joinery works is an example for that type. In these work items, the subcontractors are also the manufacturers and the subcontract price involves the material, production and the labour costs. So, “labour plus material” type of subcontracts must be used for these work items.

**Question 3:** How are the subcontractors selected? What kinds of prequalification criteria are used in subcontractor selection?

- The methods used for subcontractor selection in “labour only” and “labour plus material” types of subcontracts are different from each other. In “labour only” type, the selection is made after the negotiations that take place between contractor and potential subcontractors. References, mutual trust between the parties and having worked together previously are the dominant factors that are taken into account in subcontractor selection. Lower price is the second important determinant factor used in this evaluation.
- In “labour plus material” type of subcontracts, subcontractors are selected generally by competitive bidding. The lowest price given by one of the potential subcontractors is the dominant criterion used for the selection. Personal relationship between the parties and the references of the subcontractors are the second important factors that are evaluated after the price factor. If contractors are not satisfied with the references and the technical capability of the subcontractor that gives the lowest price, the selection criteria may change for that special situation. It can be concluded from these results that none of the respondent general contractors evaluated lower price as the only effective criterion for making the subcontractor selection.

- Contractors prefer to work with subcontractors that they have worked together previously. The reason for selecting them is the confidence and the relationship between the parties. General contractors are sure about the quality of the works completed by these subcontractors.
- Contractors prefer to use regional subcontractors for some general work items such as transportation.

**Question 4:** Does the company employ subcontractors on a permanent basis or do they select different subcontractors for each project?

- Each new project involves different special work items. Because of this reason subcontractors are selected anew according to the requirements of that specific project. The evaluation criteria used in the subcontractor selection are listed in Question 3. In the subcontracting system, it is possible for a general contractor to work with same subcontractors in more than one project but this does not mean that subcontractors are employed on a permanent basis.
- General contractors accept that working with same subcontractors in different projects develop strong personal relationship between the parties. The mutual trust that occurred as a result of this relationship has many advantages for subcontractors and contractors during the whole life of the project.

**Question 5:** Does “Pay when paid” system apply for subcontractors?

- Most of the general contractors pay to their subcontractors after they take the payments from the owner (client). This “pay when

paid” system is generally used in Turkey because the companies do not want to utilize their own resources for subcontractor payments.

- If the contractors cannot charge the payments from the owner (client) for a long time, the only alternative for them is to give the progress payments of subcontractors by using their own resources. Being a contracting company with adequate financial capability minimizes the problems about payments between the parties.
- Contractors must act in a manner that they ensure the continuity of the project by taking the subcontractors’ claims and needs into consideration. If a subcontractor believes that he has low profit margin in the project, he will try to quit from that job in the possible shortest time. In this situation the contractor, whose role in the system involves being supportive for subcontractors, should provide necessary financial support to the subcontractors. It should be kept on mind that making extra payments to the present subcontractors is usually cheaper than employing a new one.
- At the beginning of the project some portion of the advance payments taken from the owner (client) may be given to subcontractors.

**Question 6:** Is any kind of security taken from subcontractors?

- Most of the general contractors prefer to take securities from subcontractors. The amount of these securities is determined according to the total amount of the work that will be performed by the subcontractor. This amount is stated in contract clauses. There are two types of securities that are commonly used; bank guarantee letter and retention. In “labour only” type of projects the security

that is generally taken is the retention type. Contractor keeps 10% or 15% of the progress payments until the work is completed. In “labour plus material” type of projects, the contractors prefer to take bank guarantee letters from the subcontractors unless subcontractors insist on the usage of retention type of security.

**Question 7:** What are the main responsibilities of general contractors in subcontracting system?

- The general contractors have all the responsibility related with the completion of a project. Cost control, quality control of the works completed by subcontractors, planning and scheduling, subcontractor selection, and site layout are some of the responsibilities that can be listed. General contractor is the party who manages and coordinates the subcontractors that are working in project. They schedule the whole project and determine the completion time of all subcontractors. The subcontractors are responsible for completing their work within that specified period. Subcontractors do not have any responsibility related with planning and scheduling of the whole project.
- Sometimes cultural and social differences between subcontractors may cause some problems on site. The site manager is the person who tries to prevent the disputes between the subcontractors working in the same project.
- Contractors have the responsibility to give adequate and complete data (specifications, drawings, etc.) about the project to subcontractors. They are also responsible to hand over the site, materials and money on time. Contractors must ensure that all needs of subcontractors are satisfied.



**Question 8: Define your problems with subcontractors.**

- The problem that is generally encountered with subcontractors is about the amount and time of progress payments. If the subcontractor believes that he earns less money than he expected, he slows down his job and sometimes quit before completing his part. General contractor must take necessary precautions in order to prevent this situation.
- Most of the general contractors with whom this interview is made stated that subcontractor selection and proper quality controls are the most important factors that must be considered in order to avoid the disputes between the parties. It must be kept on mind that the encountered problems are closely related with the characteristics of the companies. So, the selection that will be made after a detailed evaluation of potential subcontractors will be helpful during the life of the project.
- Some of the problems between the parties may be contractor originated. Delays in handing over the site, late delivery of materials, and ignoring the needs of subcontractors can be listed as some of these problems that fall in this category.
- Lack of adequate technical personnel number in the subcontractor's organization may also be a problem between the parties during the construction period. General contractor prefer their subcontractors to control their own personnel during the project. Lack of authority between the subcontractors' personnel may also cause some problems in site.

**Question 9:** What types of subcontracts are preferred for subcontracting?

- The type of the subcontract that will be used by contractors differs according to the work items that are subcontracted. *Unit price* is the subcontract type that is generally used for specific work items such as mechanical and electrical works. In this type of subcontracts, general contractors can easily monitor the expenditures that occur in each work item. This provides an efficient cost control during the life of the project.
- *Lump sum* type of subcontracts is preferred for projects where the total subcontracted work amount is clearly defined in subcontract documents. If the description of this amount is not clear, unit price subcontracts are suitable for subcontracting. In lump sum type of subcontracts, subcontractors try to complete their work in the shortest possible time. Although this situation seems to be an advantage in project completion, it may lead to some problems about the quality of the works done. These potential problems can be prevented with the help of quality controls made by site managers.
- *Cost plus fee* subcontracts are accepted as the most risky ones that can be used for subcontracting because of the tendency of the subcontractors to increase the project costs.

**Question 10:** How are the clauses of the subcontracts affected from the terms stated in the general contract?

- Subcontract is a document that is prepared for specific work items of the project. General contract is a document that is signed between the owner (client) and the contractor and it includes the

details of the whole project. These two documents are different from each other when their work scope definitions are taken into account.

- Some of the contractors' responsibilities that are defined in the contracts may be transferred to subcontractors also. For example, subcontractors can be required to provide the same maintenance period defined in the general contract. The liquidated damage clauses that are used by the owner (client) in case of delays in project completion may be valid for subcontractors also. If owner (client) updates unit prices that are used in the contracts, the contractor must give this price difference to the subcontractors also. The transfer of the responsibilities is generally applicable for subcontractors that are employed with "labour plus material" type of subcontracts. All the examples given above do not mean that every kind of responsibility is passed to the subcontractors.

**Question 11: Who takes the risks that occur during the construction period?**

- Risk sharing between the parties during the life of the project is the most important factor that must be taken into account in subcontracting. In Turkey, subcontractors usually transfer the risks that occur within the construction period to contractors. If these risks are beyond the contractors' control, then they are transferred to the owner (client). Contractors believe that it is not so fair to force the subcontractors to work in a condition that occurred out of their control. The party who will be responsible from the defined risks is sometimes stated in the contract (or subcontract) documents.

**Question 12:** Under which conditions do the general contractor make extra payments to subcontractors?

- Generally no specific conditions are specified in subcontract documents for making extra payments. If any unexpected conditions occur during the project period, subcontractors claim indemnifying costs from the general contractor in order to complete his job. Extra payments are made for unexpected conditions that arise out of subcontractors' control.
- If the scope of work that is defined in the subcontract documents changes, general contractor must give extra payments to his subcontractors. Any change in working conditions of the site may also be a reason for subcontractors to claim additional payment.

**Question 13:** Does the owner (client) have any right to affect the subcontractor selection? Is it compulsory to take the approval of the owner (client) for the selected subcontractors?

- In general, owner (client) does not have any contribution in subcontractor selection in Turkey but sometimes contractors are obliged to select the subcontractors among the companies that are determined by owners (client). This situation is faced generally in special work items of the project. The subcontractors that are selected by the consult of the owner (client) are directly responsible to the owner.
- Sometimes owners (client) approve the subcontractors that are selected by the general contractors. This approval is a precaution that is taken for ensuring the quality of the works completed by subcontractors.

## CHAPTER VI

### SURVEY RESULTS

#### 6.1 Introduction

Within this chapter, the responses received for each question will be explained and analyzed in detail. The respondents who did not answer the questions are shown as missing values in the tables. All of the answers given by subcontractors are tabulated separately for each question. The overall response rate of this survey is calculated as 60,45%. Breakdown of the response rate is given in Table 6.0.

Table 6.0 Breakdown of Response Rates

Questionnaires	Number
Sent	220
Returned	133
Useable returns	133
Response Rate	60,45 %

Each question is evaluated according to its own total respondent number. Thus, due to missing answers encountered in some questions, 133 should not be treated as the overall respondent number applicable to each case. The frequency of the missing cases is given instead of their percentage values. "Value label" and "Value" columns in the tables are given in order

to define the questions and their choices according to the original questionnaire given in the Appendix. “Frequency” column gives the number of the respondent firms calculated separately for each choice. The percentage values are calculated with the valid case number that is different for each question. In rating scale type close-ended questions, “mode” is calculated for determining the value around which the greatest number of observations is concentrated. Analysis of each question is given in Section 6.2. The last section of this chapter includes the Crosstabs Analysis made for different subcontractor work groups.

## 6.2 Analysis of the Questions

**Question 1:** Specify the age of your subcontracting firm.

Table 6.1 Tabular representation of answers for Question 1

Value Label	Value	Frequency	Percent (%)
less than 1 year	1	7	5,3
1-5 years	2	55	41,3
6-10 years	3	32	24,1
more than 10 years	4	39	29,3
Total		133	100,0

The aim of this question is to find out the age of the respondent subcontractors. The number of valid cases in this question is 133 with zero missing case. In Figure 6.1, percentages of the answers are shown on a pie chart. As can be concluded from this figure, working as a subcontractor for 1-5 years is the dominant answer with 42%. Then comes firms working for

more than 10 years with 29%, next is firms performing for 6-10 years with 24%, and the last one is firms working for less than 1 year with the minimum percentage value of 5%. Collecting the answers from firms that have been working in the sector for some time is important for this survey in order to derive a reliable conclusion about the subcontracting system.

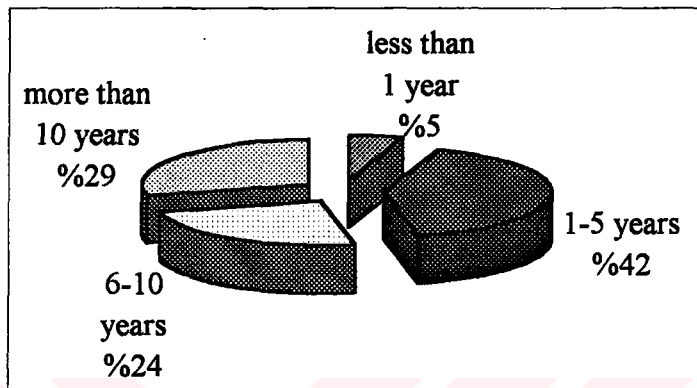


Figure 6.1 Graphical representation of answers for Question 1

**Question 2:** Specify the type of your company.

Table 6.2 Tabular representation of answers for Question 2

Value Label	Value	Frequency	Percent (%)
Sole proprietorship	1	12	9,0
Unincorporated company	2	1	0,8
Unlimited company	3	2	1,5
Limited company	4	100	75,2
Joint-stock corporation	5	18	13,5
Total		133	100,0

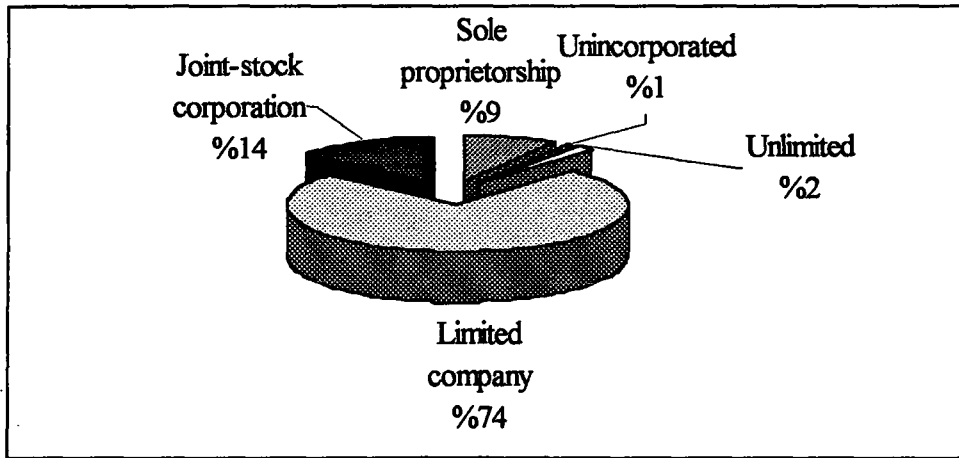


Figure 6.2 Graphical representation of company types

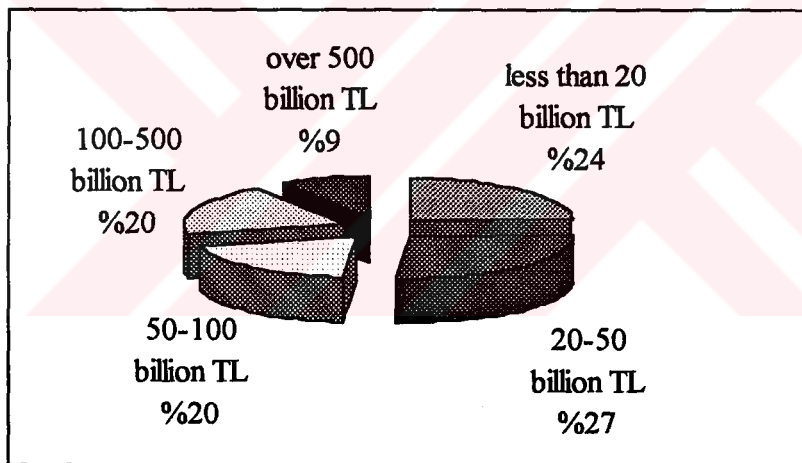
Specifying the types of the companies is useful for determining the characteristics of the respondent subcontractors. The number of valid cases in this question is 133 with zero missing case. As can be seen in the pie chart presented in Figure 6.2, 75,2% of the respondent firms are limited companies. A limited company, as outlined with laws, has less financial and tax duties compared with other types such as unlimited, unincorporated and sole proprietorship. The subcontractors in Turkey generally prefer to work as limited company mainly due to this reason. So, having high percentage for this company type is an expected result for this survey.



**Question 3:** What is the total value of works performed in 1996? (in billion TL)

**Table 6.3** Tabular representation of answers for Question 3

Value Label	Value	Frequency	Percent (%)
less than 20	1	32	24,2
20-50	2	36	27,3
50-100	3	26	19,7
100-500	4	26	19,7
over 500	5	12	9,1
Total		132	100,0



**Figure 6.3** Graphical representation of total value of works

The number of valid cases in this question is 132 with 1 missing case. The calculated percentage values show that respondent subcontracting firms generally work in medium and small sized projects with total values

less than 20 billion TL, between 20-50 billion TL and between 50-100 billion TL. Percent of the choices “100-500” and “over 500” represent the subcontractors working in large-scale projects in this system.

**Question 4:** Specify the number of permanent workers in your firm including all sites.

Table 6.4a Tabular representation of total personnel number

Number Ranges	Frequency	Percent Value (%)
0-10	32	24,1
10-50	63	47,4
over 50	38	28,5
Total	133	100

Table 6.4b Breakdown of personnel for the given number ranges

Number ranges	Technical personnel		Administrative personnel		Skilled labours		Unskilled labours	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%
0-10	119	90	124	93,2	75	56,4	77	57,9
10-50	12	9	8	6,0	45	33,8	42	31,6
over 50	2	1	1	0,8	13	9,8	14	10,5
Total	133	100	133	100	133	100	133	100

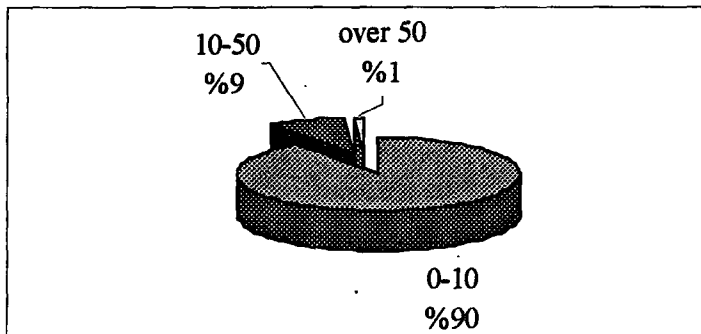


Figure 6.4a Breakdown of Technical Personnel Number

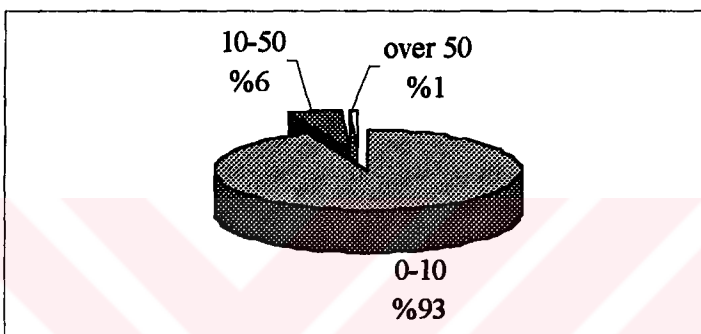


Figure 6.4b Breakdown of Administrative Personnel Number

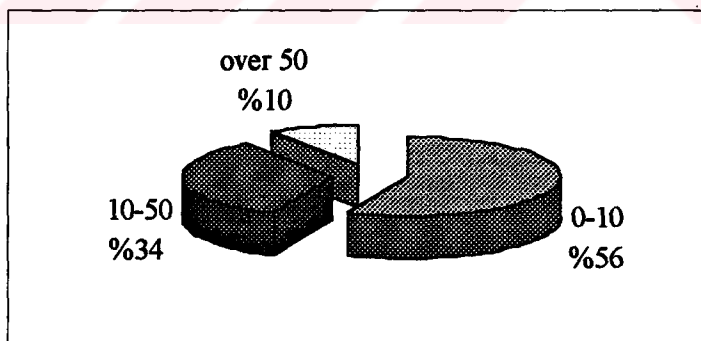


Figure 6.4c Breakdown of Skilled Labour Number

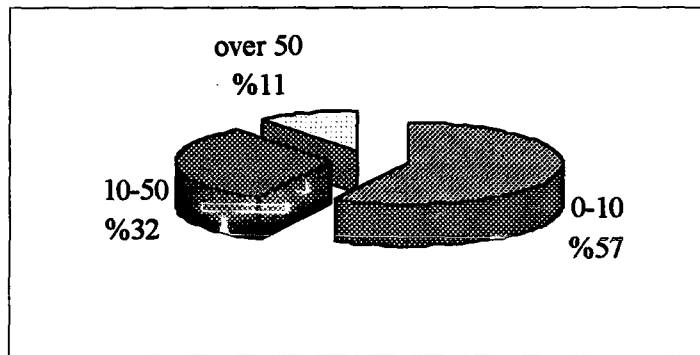


Figure 6.4d Breakdown of Unskilled Labour Number

As shown in the above figures, the number range of 0-10 is the dominant answer for all types of permanent personnel number. The percentages are 90% for technical personnel, 93,2% for administrative personnel, 56,4% for skilled labour and 57,8% for unskilled labour. In the range of “0-10”, the calculated average value of technical and administrative personnel is 3 where in the case of skilled and unskilled labours, it is found as 4. It can be concluded from these results that, the Turkish Subcontracting System is based on keeping minimum number of permanent personnel. Especially the skilled and unskilled labours are employed on a project basis. As having larger number of permanent labours means higher cost for the firm, this situation is not preferred by most of the Turkish subcontractors. So, the percentages that are calculated for this question reflect the subcontracting system’s employment characteristic.

**Question 5:** Please specify the construction types at which your firm works as a subcontractor.

Table 6.5 Tabular representation of answers for Question 5

Value Label	Value	Frequency	Percent (%)
Engineering structures (dams, bridges,airports,etc.)	1	41	30,8
Motorways	2	15	11,3
Building construction	3	102	76,7
Industrial construction	4	25	18,8

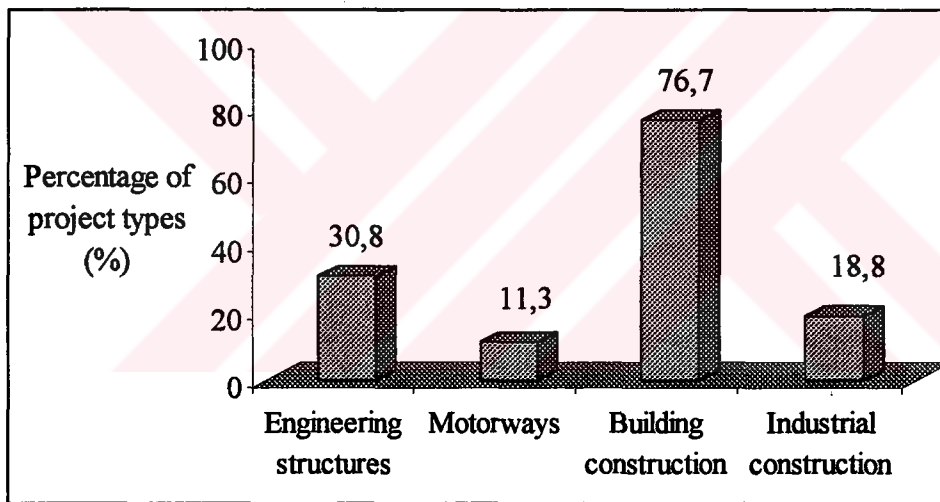


Figure 6.5 Graphical representation of answers for Question 5

Having respondent subcontractors from different work groups and working in various construction types is an important criterion that is taken into account in this survey. In Questions 5 and 6, these work groups

and project types are asked for this purpose. Some of the respondent subcontractors marked more than one alternative for this question. This situation necessitated analyzing every label as a separate question, and thus the number of respondents are taken as 133 for percentage calculations of each choice. This is the reason for having total frequency greater than 133 and the total percentage greater than 100% in Table 6.5. None of the respondents mark the “other” alternative so nothing can be mentioned about this choice. As shown in Figure 6.5, the dominant answer for this question is “working in building projects” with 76.7%.

**Question 6:** Please write at most three groups of work that your firm performs in the construction type(s) specified in Question 5.

The aim of this question is to group the subcontractors according to their specific work types. This grouping process is done with the three answers given by the respondent firms. All of the answers are analyzed and arranged in 28 different work groups. These groups and their frequencies are shown in Table 6.6. As subcontracting firms can work in more than one group, the sum of the frequency column is not equal to the total respondent number, which is 133. For example, a firm performing concrete/formwork/reinforcement works can also undertake plastering/painting or sanitary works. Due to this overlapping occurred in this question, sum of the calculated percentage values in Table 6.6 is not equal to 100%.

Table 6.6 Tabular representation of Subcontractor's Work Types

Value Label	Value	Frequency	Percent(%)
Concrete/formwork/reinforcement	1	70	52,6
Mechanical Works	2	33	24,8
Gypsum Board works	3	7	5,3
Plastering/Painting	4	30	22,6
Floor/Exterior Surface covering	5	8	6,0
Landscape projects	6	3	2,3
Sanitary works	7	21	15,8
Natural Gas works	8	10	7,5
Electrical works	9	15	11,3
Excavation works	10	24	18,0
Water insulation works	11	4	3,0
Joinery works	12	1	0,8
Glazing	13	1	0,8
Ground improvement	14	3	2,3
Production of prefabricated members	15	1	0,8
Infrastructural works	16	10	7,5
Masonry works	17	8	6,0
Ceramic works	18	14	10,5
Steel construction	19	4	3,0
Restoration	20	5	3,8
Roof works	21	2	1,5
Aluminium works	22	1	0,8
Consultancy	23	3	2,3
Cupboard/kitchen furniture production	24	1	0,8
Paving works (asphalt)	25	1	0,8
Installation/production of pipes	26	2	1,5
Pavement works	27	1	0,8
Furniture making	28	1	0,8

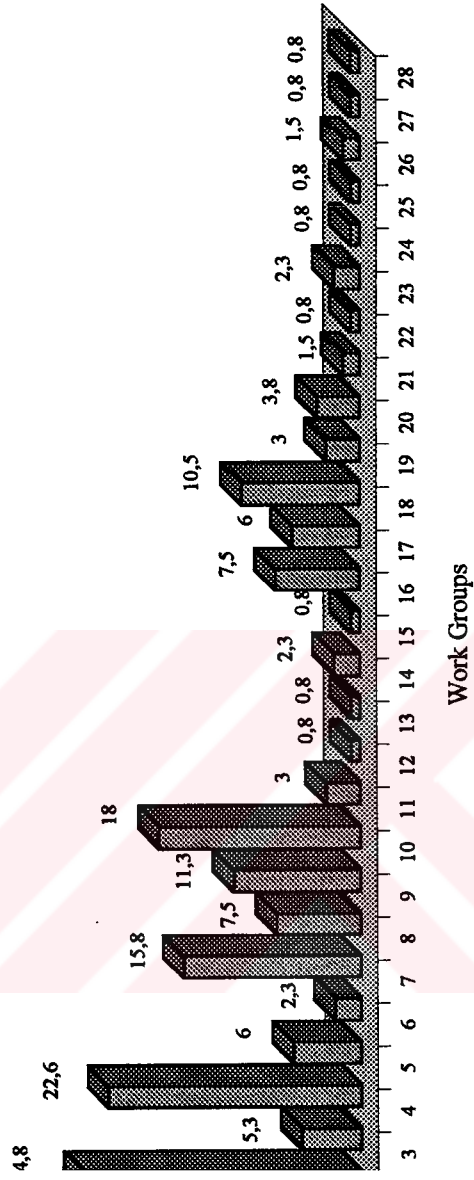


Figure 6.6 Percentage values of respondent subcontractors' work types



As can be seen in Figure 6.6, most of the respondent subcontractors, with a percentage of 52.6, are involved in the “concrete/formwork/reinforcement” work group. Joinery works (group 12), glazing (group 13), production of prefabricated members (group 15), aluminium works (group 22), cupboard/kitchen furniture production (group 24), paving works (group 25), pavement works (group 27), and furniture making (group 28) are the work groups with the least percentage value of 0.8%. Later in the chapter, this classification will be used for “Crosstabs Analysis” made for specifying the characteristics of each work group.

**Question 7:** Has your subcontracting firm ever worked as a contractor for any project?

Table 6.7 Tabular representation of answers for Question 7

Value Label	Value	Frequency	Percent (%)
No	1	63	47,7
Yes	2	69	52,3
Total		132	100,0

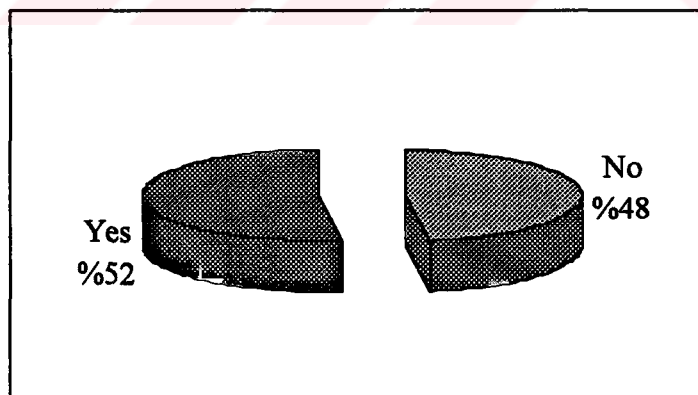


Figure 6.7 Graphical representation of answers for Question 7

As can be seen in Figure 6.7, nearly half of the respondent subcontractors also work as general contractors in projects. The number of valid cases is 132 with 1 missing case. As this question is prepared as an oriented type, the subcontractors that work as contractors in some projects answered Question 8, and the other group, which selected the “No” choice, answered Question 9.

**Question 8:** Please specify the reason(s) for working as a general contractor.

Only 69 of the respondent firms, those who have selected the “Yes” choice in Question 7, answered Question 8. As this is a filling type of question, the answers can not be tabulated but instead the given reasons are grouped as listed below:

➤ It is a common belief that being a contractor generally means earning more money and working in better conditions. So, subcontractors prefer to work as general contractors in projects. Because of the higher profit margin, the aim of most subcontractors established in Turkey is to work as a contractor by time. When the firms have adequate skill and experience, they take part as a subcontractor only in large-scale projects.

➤ Being involved in projects from first hand (as a general contractor) means direct relation with the owner/client. This situation provides more authority to the contractors and thus they have the right to control the whole process and the subcontractors working in the project. The direct relation with the owner/client also means taking regular payments during the construction period.

➤ Most of the companies work as a contractor because they think that the organization, experience, and financial strength of their company are adequate for being a contractor in the projects.

➤ Working as a general contractor is accepted as more advantageous for the future development of the company and for getting references.

**Question 9:** Please evaluate the reasons given below for working as a subcontractor instead of being a contractor. (1.Very important 2.Important 3.No effect 4.Unimportant 5. Worthless)

Only 63 of the respondent firms, who selected the “No” choice in Question 7, have answered this question. Valid and missing case numbers of each item are given in Table 6.8. The percentage values in the table are calculated by using the valid case numbers.

Table 6.8 Tabular representation of items in Question 9

A) Not having required contracting license for the type of the project										
Missing case: 6			Valid case: 57				Mode: 2			
1		2		3		4		5		
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	
12	21,1	15	26,3	13	22,8	7	12,3	10	17,5	
B) The firms' inadequate financial strength in order to take risks for the whole project										
Missing case: 3			Valid case: 60				Mode: 1			
1		2		3		4		5		
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	
26	43,3	24	40,0	7	11,7	1	1,7	2	3,3	
C) Not having enough securities necessary for making contracts										
Missing case: 6			Valid case: 57				Mode: 2			
1		2		3		4		5		
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	
10	17,5	24	42,1	13	22,8	8	14,0	2	3,5	

Table 6.8 (continued)

D) Not having enough references for being selected as a contractor									
Missing case: 4				Valid case: 59				Mode: 2	
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
8	13,6	21	35,6	12	20,3	10	16,9	8	13,6
E) Not having adequate technical personnel and equipment									
Missing case: 8				Valid case: 55				Mode: 4	
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
8	14,5	10	18,2	13	23,6	20	36,4	4	7,3
F) Not being able to be involved in projects from first hand									
Missing case: 7				Valid case: 56				Mode: 2	
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
20	35,7	21	37,5	8	14,3	6	10,7	1	1,8

As can be seen in Table 6.8, all of the items except item E are evaluated as important or very important. This situation is expected because all the items are prepared by taking into account possible important reasons for being a subcontractor. For this research, the order of importance of these reasons is also important. This order, which is determined according to the sum of the frequency values observed in “very important and important” alternatives, is given below. The list starts from the most important item.

- The firms’ inadequate financial strength in order to take risks for the whole project
- Not being able to be involved in projects from first hand
- Not having enough securities necessary for making contracts
- Not having enough references for being selected as a contractor

- Not having required contracting licence for the type of the project
- Not having adequate technical personnel and equipment

The most common reasons of working as a subcontractor, which are stated in the “other” choice, are listed below:

- As some work items in projects are not contracted separately, subcontractors cannot bid directly to the owner/client. Then, the only alternative for them is to be a subcontractor for a contractor who bids for that project.
- Companies that do not want to share the risk in the projects prefer to work as subcontractors.

**Question 10:** What kinds of methods does your company use in order to undertake a project?

Table 6.9 Tabular representation of answers for Question 10

Value Label	Value	Frequency	Percent (%)
Personal contact	1	65	48,9
Being recommended to owners/contractors	2	95	71,4
Advertisement and prepared catalogues	3	21	15,8
Market research made by contractor	4	72	54,1

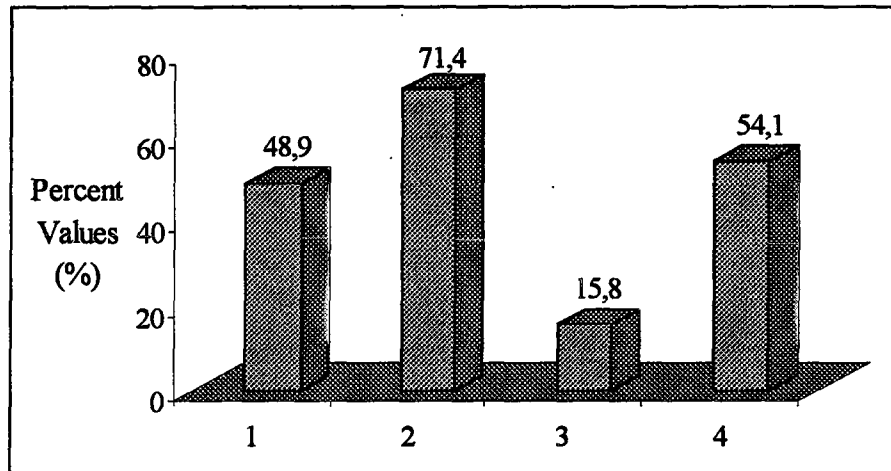


Figure 6.8 Graphical representation of answers for Question 10

As the respondents are allowed to mark more than one alternative in this question, the valid case number for each alternative is taken as 133. This value is used for the percentage calculations in Table 6.9. As it is obviously seen in Figure 6.8, “being recommended to owners and contractors” is the most commonly used method for undertaking projects with 71,4%. “Indirect communication like advertising and prepared catalogues” is the answer with the least percentage of 15,8%. Answers given for the “Other” choice can be listed as follows:

- Bidding is a commonly used method for undertaking projects in Turkey. Companies’ references, confidence in the subcontractors and their bid

- Specialization of the subcontractors in some certain work groups also plays an important role in undertaking projects.

**Question 11:** Has your firm ever worked as a subcontractor in international projects?

Table 6.10 Tabular representation of answers for Question 11

Value Label	Value	Frequency	Percent (%)
Yes	1	41	30,8
No	2	92	69,2
Total		133	100,0

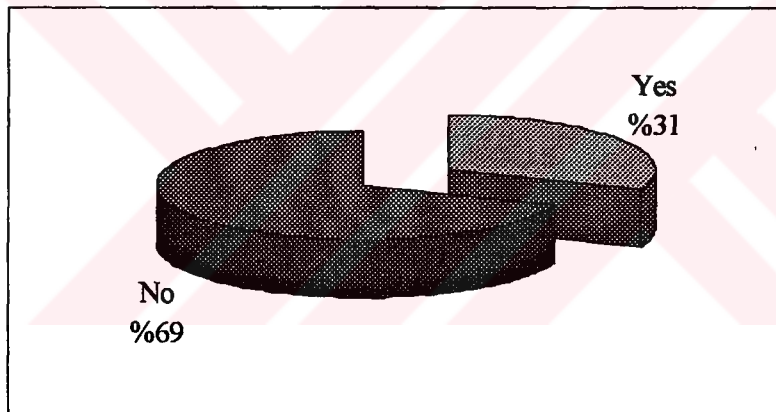


Figure 6.9 Graphical representation of answers for Question 11

As it is shown in Figure 6.9, 69% of the respondent subcontractors do not work in international projects. The valid case number in this question is 133 with zero missing case.

**Question 12:** Please evaluate the possible reasons given below for working in international projects as a subcontractor. (1.Very important 2.Important 3.No effect 4. Unimportant 5.Worthless)

Only 41 of the respondent subcontractors who selected “Yes” alternative in Question 11 have answered this question. The valid case number of each item is given in Table 6.11. These values are also used in percentage calculations shown in the table.

Table 6.11 Tabular representation of items in Question 12

A) Having less financial risk in the contracts signed in terms of foreign currency									
Missing case: 3			Valid case: 38				Mode: 1		
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
18	47,4	8	21,1	7	18,4	1	2,6	4	10,5
B) Having high and uncertain rate of inflation in Turkey									
Missing case: 5			Valid case: 36				Mode: 2		
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
11	30,6	17	47,2	4	11,1	0	0	4	11,1
C) Market stagnation and lack of demand in Turkey									
Missing case: 6			Valid case: 35				Mode: 2		
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
7	20,0	18	51,4	6	17,1	1	2,9	3	8,6



Table 6.11 (continued)

D) Working with a contractor who undertakes projects in foreign countries									
Missing case: 4				Valid case: 37				Mode: 2	
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
10	27,0	20	54,1	2	5,4	1	2,7	4	10,8
E) Willingness to find new job opportunities in foreign markets									
Missing case: 6				Valid case: 35				Mode: 1	
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
18	51,4	9	25,7	4	11,4	0	0	4	11,4

Table 6.11 shows detailed statistics about the respondent number of the items. Each possible reason listed in the question is evaluated as “very important” or “important” by the subcontractors. The importance order of these items must also be determined in order to derive a conclusion. For this reason, they are ranked according to the sum of the observed frequency values for “very important” and “important” scales. The list of the possible reasons is given below starting from the most important one.

- Working with a contractor who undertakes projects in foreign countries.
- Having high and uncertain rate of inflation in Turkey.
- Willingness to find new job opportunities in foreign markets.
- Having less financial risk in contracts signed in terms of foreign currency.
- Market stagnation and lack of demand in Turkey.

Contractors who work in international projects prefer to work with subcontractors that they have worked previously since working in a foreign country means a risk for the contractors also. In this situation, they want to work with subcontractors that they can trust. So, “working with a contractor who undertakes projects in foreign countries” is the most important reason ranked by subcontractors for taking part in international projects.

“Having new job opportunities in foreign markets” is important for the future development of subcontracting companies, because each new job means a new reference and experience for the company.

Having higher profit margins, having no problems related with project financing, possibility of having international experience and reference are the other reasons that are listed by the respondents under the “Other” choice in this question.

**Question 13:** Please evaluate the possible factors given below that may affect your decision for to bid or not. (1. Very important 2.Important 3. No effect 4.Unimportant 5. Worthless)

Table 6.12 Tabular representation of items in Question 13

A) Need for work				
Missing case: 8		Valid case: 125		Mode: 2
1	2	3	4	5

Table 6.12 (continued)

C) Experience in such projects									
Missing case: 5				Valid case: 128				Mode: 2	
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
57	44,5	60	46,9	5	3,9	3	2,3	3	2,3
D) Availability of qualified staff and equipment									
Missing case: 9				Valid case: 124				Mode: 2	
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
44	35,5	56	45,2	18	14,5	5	4,0	1	0,8
E) Project location									
Missing case: 11				Valid case: 122				Mode: 2	
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
29	23,8	50	41,0	19	15,6	17	13,9	7	5,7
F) Contract type and possibility of higher profit margin									
Missing case: 10				Valid case: 123				Modes: 1 and 2	
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
56	45,5	56	45,5	4	3,3	6	4,9	1	0,8
G) Competitor firms tendering									
Missing case: 18				Valid case: 115				Mode: 2	
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
13	11,3	33	28,7	32	27,8	20	17,4	17	14,8

Table 6.12 gives the breakdown of answers for the possible factors affecting the bid decision of subcontractors. It is seen that each item in this table is evaluated as “very important” or “important”. The possible factors listed in Question 13 are arranged according to the sum of frequencies of “very important” and “important” scales. The list given below shows the results of this arrangement. It begins with the most important factor.

- Experience in such projects
- Contract type and possibility of higher profit margin
- Need for work
- Availability of qualified staff and equipment
- Project location
- Number of competitors tendering
- Competitor firms tendering

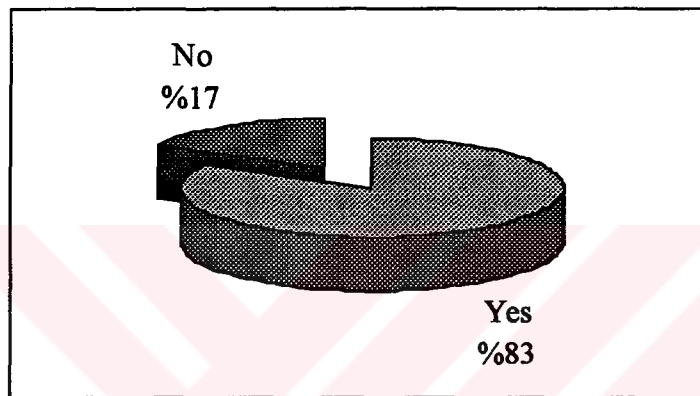
Some of the factors mentioned by the respondent subcontractors under the “Other” choice of this question are also listed below:

- Contract conditions
- Possibility of having regular payments
- Technical and financial situation of the contractor
- Availability of project financing sources
- Confidence in general contractor
- Completion period of the project

**Question 14: Does the owner/client affect the selection of subcontractors?**

**Table 6.13** Tabular representation of answers for Question 14

Value Label	Value	Frequency	Percent (%)
Yes	1	108	83,1
No	2	22	16,9
Total		130	100,0



**Figure 6.10** Graphical representation of answers for Question 14

As it is seen in Figure 6.10, the majority of the respondent subcontractors believe that the owner/client has an influence in the selection of the subcontractors. This may be in two ways. First way is to mention the subcontracting firm names in the contracts because of their technical capability about a specific work item. This one is used if the owner/client wants a special type of material or a special kind of application in the projects. Second way is to advise the subcontractors directly to the contractor companies, but contractors generally consider this form as an unethical application in subcontracting system.

**Question 15:** Please evaluate the criteria given below by considering their affect in subcontractor selection in Turkey.

(1.Very important 2.Important 3.No effect 4.Unimportant 5.Worthless)

Table 6.14 Tabular representation of items in Question 15

A) Previous performance and references of subcontractors									
Missing case: 2		Valid case: 131				Modes: 1			
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
97	74,0	28	21,4	4	3,1	1	0,8	1	0,8
B) Financial strength of subcontractors									
Missing case: 8		Valid case: 125				Mode: 2			
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
32	25,6	64	51,2	20	16,0	5	4,0	4	3,2
C) Subcontracting firms' location									
Missing case: 13		Valid case: 120				Mode: 3			
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
17	14,2	34	28,3	48	40,0	14	11,7	7	5,8
D) Project team's expertise									
Missing case: 5		Valid case: 128				Mode: 2			

Table 6.14 (continued)

E) Low price given by the subcontractor									
Missing case: 9		Valid case: 124				Mode: 2			
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
39	31,5	55	44,4	17	13,7	12	9,7	1	0,8
F) Availability of qualified staff and equipment									
Missing case: 128		Valid case: 5				Mode: 2			
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
55	43,0	61	47,7	9	7,0	2	1,6	1	0,8

As it is seen in Table 6.14, all the criteria except “subcontracting firms’ location” are evaluated as “very important” or “important” in this question. These results show the viewpoint of the respondent subcontractors about the selection process in the subcontracting system. The effective criteria listed in Question 15, are arranged according to the sum of the frequency values of “very important” and “important” scales. The results are listed below starting from the most important one.

- Previous performance and references of subcontractors
- Project teams’ expertise
- Availability of qualified staff and equipment
- Financial strength of subcontractors
- Low price given by the subcontractor
- Subcontracting firms’ location

As it is seen in the list of criteria given above, previous performance, references and experience are thought to be the determinant factors in subcontractor selection in Turkey. Subcontractors believe that “Project teams’ expertise” criterion is an important one in the Turkish Subcontracting System because it is thought as one of the reliable ways to assess the subcontractor personnel’s technical capability. Another important conclusion that can be derived from this list is that price is not assessed as the most effective criterion for subcontractor selection.

“Personal relationship between subcontractors and general contractors” is the answer that is stated mostly under the “other” choice for this question. Recommendation of the third parties about one of the competitor subcontractors is another criterion that is taken into account for subcontractor selection in Turkey. If a subcontractor with inadequate technical capability is selected for the project, then this situation may affect the confidence in contracting companies about this selection and bidding process.

**Question 16:** Give the percentage of the subcontracts made between your subcontracting firm and general contractor as written or oral.

Table 6.15 Tabular representation of subcontract type for Question 16

Value Label	Value	Frequency	Percent
-------------	-------	-----------	---------



Table 6.15 (continued)

Written subcontracts:50% Oral agreements:50%	4	6	4,7
Written subcontracts:0% Oral agreements:100%	5	1	0,8

The number of valid cases in this question is 129 with 4 missing cases. As it is shown in Table 6.15, some specific labels are defined for different percentage values of subcontracts. Among these labels value “1”, which is defined for 100% written subcontracts and 0% oral agreements”, has the highest percentage of 60,5 %. Then comes value “2” which represents “written subcontract percentage between 50-100% and oral agreement percentage between 0-50%” with 31%. The percentage values are summarised as a pie chart in Figure 6.11. For an efficient subcontracting system, usage of oral agreements must be kept at minimum or equal to zero so the percentage value of label “1” is expected to be higher.

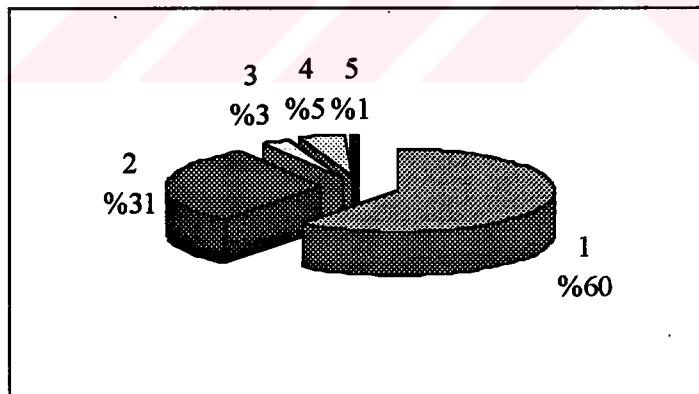


Figure 6.11 Graphical representation of answers for Question 16

**Question 17:** As a subcontractor, what type of subcontracts do you use for works that includes no material supply by general contractor? (subcontracted as labour plus material)

This question aims to find out the general tendency about the subcontract types used for works that are subcontracted as “labour plus material”. The valid case number in this question is 129 with 4 missing case. Three most commonly used types of subcontracts are chosen for the analysis of Question 17 and 18. In Table 6.16, the percentages of usage for such subcontract types are given for the specified number ranges.

**Table 6.16** Tabular representation of used subcontract types for work items subcontracted as “labour plus material”

Percentage ranges of usage (%)	Unit Price		Lump Sum		Cost plus fee	
	Freq	%	Freq	%	Freq	%
100	32	24,8	15	11,6	4	3,1
75-99	24	18,6	10	7,8	3	2,3
51-74	15	11,6	7	5,4	0	0
25-50	21	16,3	24	18,6	8	6,2
1-24	14	10,9	26	20,2	32	24,8
0	23	17,8	47	36,4	82	63,6

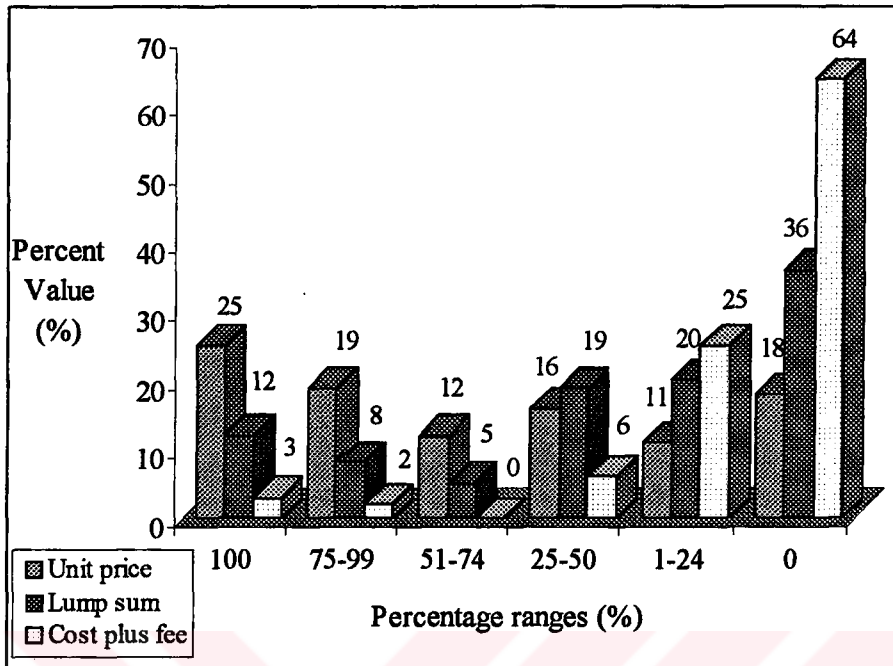


Figure 6.12 Graphical representation of used subcontract types in Question 17

As it is shown in Figure 6.12, 25% of the respondents answered that they use unit price type subcontracts only. This value is 12% for lump sum subcontracts and it is 3% for cost plus fee type. The figure represents the percentage of subcontract usage for defined ranges. The unit price type subcontracts has the highest percentage among the other types for ranges up to 50%. It can be concluded from these results that unit price is the most commonly used subcontract type in Turkey for work items that are subcontracted as “labour plus material”. Cost plus fee is the one that has the minimum usage percentage among the other subcontract types.

**Question 18:** As a subcontractor, what type of subcontracts do you use for works that includes material supply by the general contractor? (subcontracted as labour only)

Table 6.17 Tabular representation of used subcontract types for work items subcontracted as “labour only”

Percentage Ranges of Usage (%)	Unit Price		Lump Sum		Cost plus fee	
	Freq	%	Freq	%	Freq	%
100	43	33,9	22	17,3	8	6,3
75-99	13	10,2	6	4,7	3	2,4
51-74	6	4,7	5	3,9	0	0
25-50	14	11	15	11,8	7	5,5
1-24	6	4,7	15	11,8	16	12,6
0	45	35,4	64	50,4	93	73,2

In this question, some of the respondent subcontractors stated that they do not work in “labour only” type of subcontracts because all of

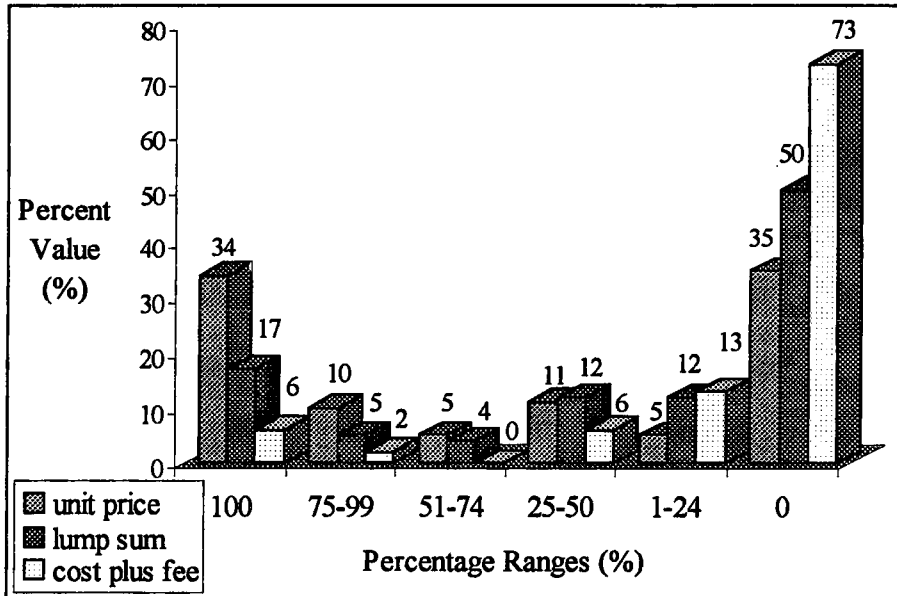


Figure 6.13 Graphical representation of used subcontract types in Question 18

**Question 19:** Does the initial bid price given by your subcontracting firm differ until the subcontract is made?

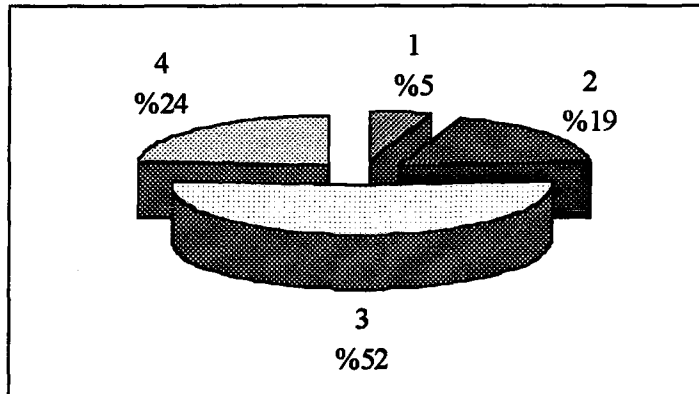


Figure 6.14 Graphical representation of answers in Question 19

As it can be seen in Figure 6.14, 52% of the respondents stated that the initial bid price given by the subcontractors might change after the bargain made with the contractor. A very small percentage of respondents, 5%, selected the choice “the price remains always the same”. The valid case number in this question is 133 with zero missing case. In the “other” choice of this question, subcontractors stated that the subcontract price does not have to be updated if it is made in a foreign currency.

**Question 20:** Does your firm provide any securities (retention or bank guarantee letters) to the contractors for projects?

Table 6.19 Tabular representation of answers for Question 20

Value Label	Value	Frequency	Percent (%)
Yes	1	114	85,7
No	2	19	14,3
Total		133	100

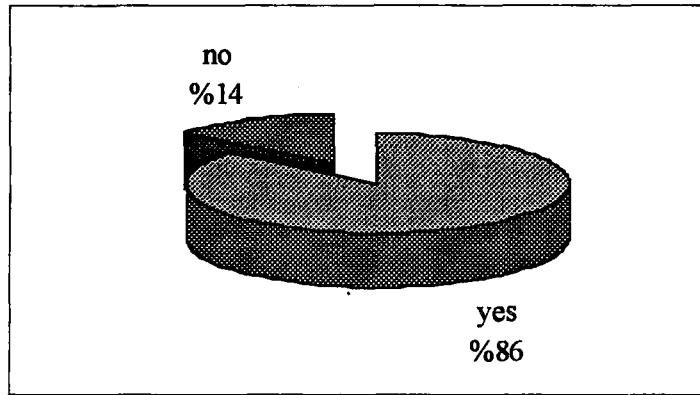


Figure 6.15 Graphical representation of answers in Question 20

This question is designed as an oriented type in which the respondents are directed to answer different questions according to the choice they have marked. The companies who have selected the “no” choice skipped to Question 23 where others answered Question 21 and 22. As it is shown in Figure 6.15, 86% of the subcontractors provide securities to contractors for projects. These securities are taken in order to prevent the occurrence of some problems between the parties like quitting the work. The number of missing case in this question is zero.

114 of the respondent subcontractors who have selected “Yes” alternative in Question 20 answered this question. Valid case number that is used for percentage calculations in Table 6.20 is 114. As the respondents are allowed to mark more than one alternative, it is impossible to have the sum of percentage values equal to 100%. Bank guarantee letter and retention are the two types of securities that are commonly provided in Turkey. Retention is a constant percentage that is separately calculated for each progress payment. This percentage value may change in each subcontract. Contractor keeps this amount until the end of project completion and pays it back to subcontractors after final acceptance. “First degree mortgage on real estate” is a security type that is specified by subcontractors under the “other” choice of this question. The percent values are shown in Figure 6.16.

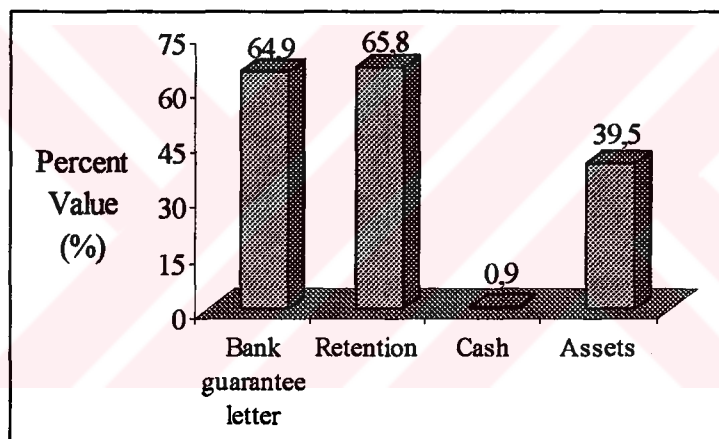


Figure 6.16 Graphical representation of used security types

**Question 22:** When do you generally receive back your retention or bank guarantee letter from the general contractor?

114 of the respondents who have selected “yes” choice in Question 20 answered this question. Valid case number is 108 with 6 missing cases. As it is seen in Table 6.21 and Figure 6.17, most of the subcontractors receive back their securities within 30 days after final acceptance. It can be concluded



from these results that subcontractors do not have problems about this repayment period.

Table 6.21 Tabular representation of answers in Question 22

Value Label	Value	Frequency	Percent (%)
Up to 30 days after final acceptance	1	65	60,2
Up to 6 months after final acceptance	2	22	20,4
Up to 1 year after final acceptance	3	15	13,9
More than 1 year after final acceptance	4	6	5,6

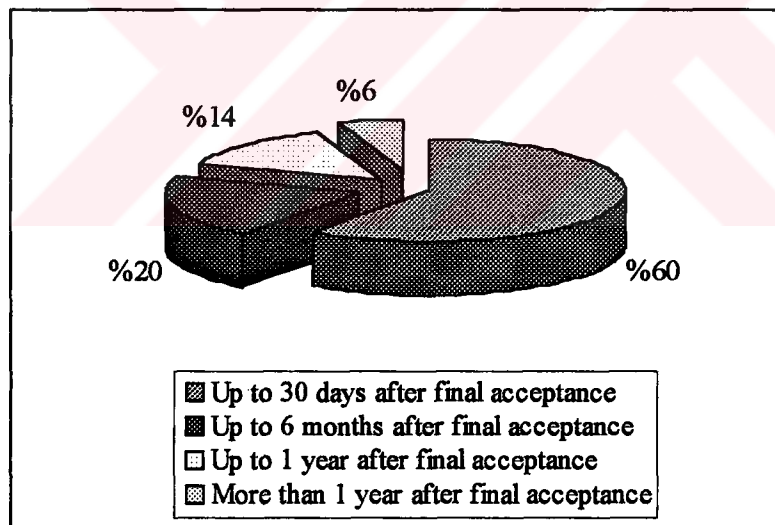
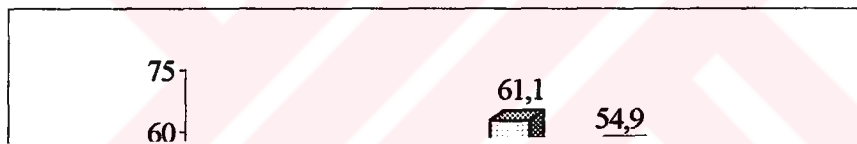


Figure 6.17 Graphical representation of answers in Question 22

**Question 23:** What objectives do you consider to be the performance determinants of success for a project? Please scale the objectives from 1 to 3. (Give 1 for the most important and 3 for the least important one)

Table 6.22 Tabular representation of objective scaling in Question 23

Value Label	Value	Scale					
		1		2		3	
		Freq	%	Freq	%	Freq	%
To complete the project within specified period	1	38	33,6	48	42,5	27	23,9
To complete the project within budget	2	13	11,5	31	27,4	69	61,1
To complete the project in conformance with quality standards	3	62	54,9	34	30,1	17	15,0



The aim of this question is to analyze the subcontractor's viewpoint about the three objectives listed in Table 6.22. Valid case number used in percent calculation of all listed objectives is equal to 113. For the evaluation of these objectives a scale from 1 to 3 is used. Scale 1 represents the "most important" and Scale 3 represents the "least important" objective. As it is shown in Figure 6.18, "to complete the project in conformance with quality standards" has the highest percentage, 54.9%, for Scale 1. "To complete the project within specified period" is the alternative that is evaluated as the second important objective by 42,5% of the respondents. The last objective of "to complete the project within budget" has the highest percentage of 61,1% for Scale 3. These results show that, subcontracting companies in Turkey assess "quality" as the most important performance determinant for success in a project.

**Question 24:** Please evaluate the possible causes of delays given below.  
(1. Very important 2.Important 3.No effect 4.Unimportant 5.Worthless)

Table 6.23 Tabular representation of items in Question 24

Table 6.23 (continued)

C) Poor management of the general contractor									
Missing case: 10			Valid case: 123				Mode: 2		
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
50	40,7	58	47,2	12	9,8	2	1,6	1	0,8
D) Unexpected site conditions									
Missing case: 9			Valid case: 124				Mode: 2		
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
25	20,2	68	54,8	19	15,3	8	6,5	4	3,2
E) Poor communication/coordination between subcontractor and general contractor									
Missing case: 4			Valid case: 129				Mode: 2		
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
40	31,0	75	58,1	7	5,4	4	3,1	3	2,3

Table 6.23 (continued)

<b>H) Unexpected weather conditions</b>									
Missing case: 11			Valid case: 122				Mode: 2		
<b>1</b>		<b>2</b>		<b>3</b>		<b>4</b>		<b>5</b>	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
25	20,5	55	45,1	28	23,0	12	9,8	2	1,6
<b>I) Delays in payment</b>									
Missing case: 11			Valid case: 122				Mode: 1		
<b>1</b>		<b>2</b>		<b>3</b>		<b>4</b>		<b>5</b>	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
61	50	40	32,8	15	12,3	4	3,3	2	1,6

In Table 6.23, breakdown of the answers given to Question 24 is shown. The valid case number is different for each item. The percentage values in Table 6.23 are calculated according to the respondent subcontractor number of each item. As it is seen, subcontractors evaluate all these items as “important” or “very important”.

The possible causes of delays are arranged by considering the sum of the frequency values observed for “very important” and “important” scales. The arranged list given below starts from the most important cause of delay.

- Poor communication/coordination between subcontractor and general contractor
- Late approvals taken from owner/client or control department
- Poor management of the general contractor
- Late material supply

- Design changes
- Delays in payment
- Unexpected site conditions
- Unexpected weather conditions
- Breakdown of equipment

Some of the possible causes of delays stated by the respondents under the “other” choice of this question are as follows:

- Disputes between subcontractors and general contractors cause delays in the completion of the project.
- Not having a defined work schedule/program may cause delays during the life of the project.
- Employing qualified technical personnel may take some extra time if right person have not been assigned at the beginning of the project.

**Question 25:** Please evaluate the given conditions by taking into account your experience and your relationship with the general contractors. 1.Strongly disagree 2.Disagree 3.Neutral (no opinion) 4.Agree 5.Strongly agree

Table 6.24 Tabular representation of answers in Question 25

A) Contractors monitor the performance of its subcontractors including their financial performance.									
Missing case: 3			Valid case: 130				Mode: 4		
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
7	5,4	38	29,2	11	8,5	62	47,7	12	9,2

Table 6.24 (continued)

B) Contractors have positive attitude for satisfying the needs of subcontractors.									
Missing case: 4			Valid case: 129				Mode: 4		
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
6	4,7	37	28,7	11	8,5	66	51,2	9	7,0
C) The general contractor has the authority to direct the subcontractor when and where to work.									
Missing case: 3			Valid case: 130				Mode: 4		
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
4	3,1	8	6,2	9	6,9	68	52,3	41	31,5
D) Without the approval of the subcontractor, the general contractor may change the schedule and sequence of works, suspend or delay any subcontracted work without paying any indemnifying cost.									
Missing case: 5			Valid case: 128				Mode: 2		
1		2		3		4		5	

Table 6.24 (continued)

F) The subcontractors cannot propose any claims for the inequities that they experience from the general contractor due to the possibility of working with the same contractor at future projects.									
Missing case: 3			Valid case: 130				Mode: 4		
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
11	8,5	30	23,1	10	7,7	52	40	27	20,8
G) The subcontractors are compelled to sign the subcontract being imposed by the general contractor.									
Missing case: 3			Valid case: 130				Mode: 4		
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
13	10	39	30	6	4,6	52	40	20	15,4
H) The subcontractors cannot suggest any kind of changes in the clauses of the subcontract.									
Missing case: 4			Valid case: 129				Mode: 2		
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
10	7,8	69	53,5	7	5,4	32	24,8	11	8,5
I) The subcontractors usually receive their progress payments within the time specified in the contract.									
Missing case: 5			Valid case: 128				Modes: 2 and 4		
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
18	14,1	49	38,3	4	3,1	49	38,3	8	6,3



Table 6.24 (continued)

D) Payment to subcontractors is delayed because the general contractor diverts the funds to other areas of its own business.									
Missing case: 3			Valid case: 130				Mode: 4		
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
9	6,9	26	20	21	16,2	58	44,6	16	12,3
K) The prices submitted by the subcontractors on similar jobs may show great fluctuations with respect to the general contractor being involved in the project.									
Missing case: 4			Valid case: 129				Mode: 4		
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
8	6,2	12	9,3	4	3,1	79	61,2	26	20,2
L) Contractors handle the coordination of the subcontractors working in the same project.									
Missing case: 4			Valid case: 129				Mode: 4		
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
3	2,3	8	6,2	7	5,4	85	65,9	26	20,2
M) Subcontractors have the right to use sub-subcontractors for the construction process.									
Missing case: 4			Valid case: 129				Mode: 4		
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
1	0,8	12	9,3	5	3,9	89	69	22	17,1

Table 6.24 (continued)

N) No contractual relationship exists between owner/client and subcontractor.										
Missing case: 5			Valid case: 128				Mode: 2			
1		2		3		4		5		
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	
27	21,1	57	44,5	10	7,8	20	15,6	14	10,9	
O) Subcontractor bears the full responsibility for any kind of accidents and damages given to third parties.										
Missing case: 5			Valid case: 128				Mode: 2			
1		2		3		4		5		
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	
16	12,5	43	33,6	12	9,4	41	32	16	12,5	
P) Subcontracting system is the fundamental element of the Turkish Construction Industry.										
Missing case: 6			Valid case: 127				Mode: 5			
1		2		3		4		5		
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	

- \* Contractors have positive attitude for satisfying the needs of subcontractors
- \* The general contractor has the authority to direct the subcontractor when and where to work.
- \* Contractor has the right to check the number and capacity of subcontractor workers on site.
- \* The subcontractors cannot propose any claims for the inequities that they experience from the general contractor due to the possibility of working with the same contractor at future projects.
- \* The subcontractors are compelled to sign the subcontract being imposed by the general contractor.
- \* Payment to subcontractors is delayed because the general contractor diverts the funds to other areas of its own business.
- \* The prices submitted by the subcontractors on similar jobs may show great fluctuations with respect to the general contractor being involved in the project.
- \* Contractors handle the coordination of the subcontractors working in the same project.
- \* Subcontractors have the right to use sub-subcontractors for the construction process.
- \* Subcontracting system is the fundamental element of the Turkish Construction Industry.

Discussed items:

**Question 26:** Please evaluate the possible causes of disputes between your firm and general contractor. (1. Very important 2.Important 3.No effect 4.Unimportant 5.Worthless)

Table 6.25 Tabular representation of items in Question 26

A) Subcontractor's poor quality work									
Missing case: 3			Valid case: 130				Mode: 1		
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
65	50	57	43,8	6	4,6	1	0,8	1	0,8
B) Changes made by contractors in work schedule/scope									
Missing case: 4			Valid case: 129				Mode: 2		
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
13	10,1	88	68,2	17	13,2	6	4,7	5	3,9
C) Having inadequate definition of responsibility for parties									
Missing case: 3			Valid case: 130				Mode: 2		
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
37	28,5	73	56,2	14	10,8	5	3,8	1	0,8
D) Having unexpected site conditions									
Missing case: 6			Valid case: 127				Mode: 2		
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
12	9,4	57	44,9	35	27,6	18	14,2	5	3,9

Table 6.25 (continued)

E) Having inadequate work scope definition									
Missing case: 5			Valid case: 128				Mode: 2		
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
22	17,2	87	68	14	10,9	4	3,1	1	0,8
F) Unclear definition of the party who will take care of cost changes									
Missing case: 6			Valid case: 127				Mode: 2		
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
36	28,3	72	56,7	13	10,2	5	3,9	1	0,8
G) Delays in hand over of the site									
Missing case: 5			Valid case: 128				Mode: 2		
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
25	19,5	77	60,2	22	17,2	3	2,3	1	0,8
H) Delays in subcontractor payment									
Missing case: 2			Valid case: 131				Mode: 1		
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
70	53,4	54	41,2	7	5,3	0	0	0	0
I) Poor application of site safety rules by subcontractor									
Missing case: 4			Valid case: 129				Mode: 2		
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
16	12,4	68	52,7	34	26,4	9	7	2	1,6

Table 6.25 (continued)

J) Disagreement between the parties regarding the quantity of work performed									
Missing case: 3			Valid case: 130				Mode: 2		
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
22	16,9	74	56,9	21	16,2	12	9,2	1	0,8
K) Not having a written subcontract									
Missing case: 4			Valid case: 129				Mode: 2		
1		2		3		4		5	
Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
46	35,7	66	51,2	11	8,5	4	3,1	2	1,6

In Table 6.25, breakdown of the answers is given for Question 26. The percentage values are calculated according to the valid case number in each item. The possible causes of disputes are ordered according to the sum of the frequency values observed in “very important” and “important” scales. The list prepared by this method is given below. The first item is the most important one in the list.

- Delays in subcontractor payments
- Subcontractor’s poor quality work
- Not having a written subcontract
- Having inadequate definition of responsibility for parties
- Having inadequate work scope definition
- Unclear definition of the party who will take care of cost changes
- Delays in hand over of the site

- Changes made by contractors in work schedule/scope
- Disagreement between the parties regarding the quantity of work performed
- Poor application of site safety rules by subcontractor
- Having unexpected site conditions

Respondent subcontractors also specify some possible causes of disputes other than the items defined in the question. These can be listed as follows:

- Not having written documents for scope changes
- Poor coordination between the subcontractors working in the same project
- Not following the work schedule determined by general contractors

It is observed in Question 24 and Question 26 that, most of the reasons for disputes and delays are related with each other. Although a situation that causes a dispute between parties may lead to a delay during the life of the project, the reverse is not always true.

**Question 27:** What is the preferred method for solving disputes with general contractors?

Table 6.26 Tabular representation of answers in Question 27

Value Label	Value	Frequency	Percent (%)
Legal courts	1	3	2,3
Using arbitration	2	12	9,1
Negotiations made with contractors	3	117	88,6

As it is seen in Table 6.26, subcontractors prefer to solve their problems by negotiations made with general contractors. “Legal courts” is not a preferred alternative because it is the method that takes a long time. Valid case number in this question is 132 with 1 missing case. The percentage values of the alternatives are shown in Figure 6.19.

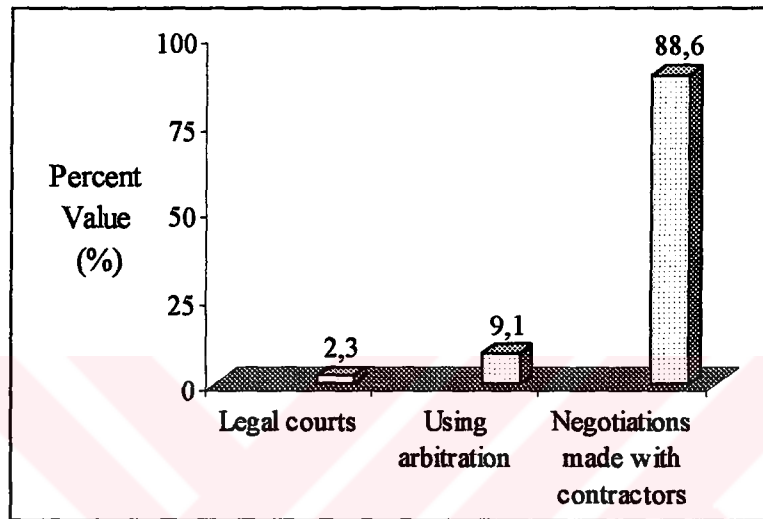


Figure 6.19 Graphical representation of answers in Question 27



### **6.3 Crosstabs Analysis of Questions**

Crosstabs Analysis is a method used by SPSS program. It determines the number of the respondents who answered the two specified questions at the same time. In section 6.2, analyses of the questions are made for all the respondent subcontractors, without giving attention to their work groups. In this part of the chapter, Crosstabs Analysis is made with some of the questions in the questionnaire for different respondent work groups. In subcontracting system, each work group may have different viewpoints about the applications. The work groups used in this analysis are selected from the ones that are shown in Table 6.6.

As it is seen in Table 6.6, some of the work groups have less frequency values when compared with the others. This is because none of the subcontractor work groups are specially chosen as respondent in this survey. The work groups that have frequencies equal to or larger than 10 is used in the Crosstabs Analysis since the usage of the other groups will not provide reliable conclusions about the practices of the system because of the small number of respondent. The work groups that are used for Crosstabs Analysis are given in

Table 6.27 Work groups used in Crosstabs Analysis

Work Group	Group No	Frequency
Concrete/formwork/reinforcement	1	70
Mechanical works	2	33
Plastering/Painting	4	30
Sanitary works	7	21
Natural gas works	8	10
Electrical works	9	15
Excavation works	10	24
Infrastructural works	16	10
Ceramic works	18	14

### 6.3.1 Crosstabs Analysis of Question 23

In this section, the objectives defined as project success determinants are evaluated according to the different work groups shown in Table 6.27. The results of the analysis made for each group are summarized in Table 6.28 given below. The table shows the most important success determinants in a project assessed by each of the selected subcontractor work groups. The total number of the group members and the respondents who have answered Question 23 is indicated in this table. Missing case numbers are different for each subcontractor work group. For example, group member number of the concrete/reinforcement/formwork subcontractors is 70 where 62 of them answered Question 23. Most of the companies who belong to this group selected “to complete the project in conformance with quality standards” as the most important determinant of success in a project. All the specified groups are analyzed in this form and the results are summarized in Table 6.28.

Table 6.28 Crosstabs Analysis of Question 23

Work Group	Group member number / respondent number	To complete the project within specified period	To complete the project within budget	To complete the project in conformance with quality standards
Concrete/ reinforcement/ formwork	70 / 62			✓
Mechanical works	33 / 26			✓
Sanitary works	21 / 17			✓
Natural gas works	10 / 9			✓
Electrical works	15 / 12			✓
Infrastructural works	16 / 7			✓
Excavation works	24 / 20	✓		
Plastering/ painting	30 / 26	✓		
Ceramic works	14 / 12	✓		

What is obviously seen from these results is that, none of the respondent subcontractors among the selected work groups evaluated “to complete the project within budget” as the most important objective in project success. Having different arrangement of success determinants for various work groups is an expected result in this survey since these objectives are closely related with the type of the work items. For example, “to complete the project within specified period” is a more important criterion in project success than other objectives for excavation works subcontractors.

### **6.3.2 Crosstabs Analysis of Question 24**

In this section, Crosstabs Analysis is made for 9 different groups of subcontractors that are shown in Table 6.27 with each item of Question 24, which was about the causes of delay. Since the items are analyzed independently, the valid case numbers are different for each case. The results of the Crosstabs Analysis are arranged according to the different subcontractor work groups. The lists are prepared separately for each work group and the arrangement of the causes is made according to the sum of the respondent number who selected “very important” and “important” scales. The list of the items’ order of importance, which is prepared by this method, is given below. The lists begin with the most important cause of delay that is evaluated by the respondent group. The values in the parenthesis represents the group number and the respondent number who evaluated the items as “very important” and “important” (group member number/respondent frequency). The prepared lists aim to specify the first three important items among the ones stated in Question 24, but in some groups more than three items are listed because the sum of the frequencies observed for the “very important” and “important” scales are same. For these items it is not possible to define a specific importance order.

#### ***For Concrete/Reinforcement/Formwork (Group1) subcontractors***

- Late material supply (70/63)
- Late approvals taken from owner/client or control department (70/61)
- Poor communication/coordination between subcontractor and general contractor (70/61)
- Poor management of the general contractor (70/61)

***For Mechanical works (Group 2) subcontractors***

- Design changes (33/31)
- Late approvals taken from owner/client or control department (33/31)
- Delays in payment (33/29)
- Poor communication/coordination between subcontractor and general contractor (33/29)

***For Plastering/Painting works (Group 4) subcontractors***

- Poor communication/coordination between subcontractor and general contractor (30/29)
- Poor management of the general contractor (30/28)
- Late approvals taken from owner/client or control department (30/26)

***For Sanitary works (Group 7) subcontractors***

- Late material supply (10/9)

***For Electrical works (Group 9) subcontractors***

- Poor communication/coordination between subcontractor and general contractor (15/15)
- Delays in payment (15/13)
- Design changes (15/13)

***For Excavation works (Group 10) subcontractors***

- Late approvals taken from owner/client or control department (24/22)
- Poor management of the general contractor (24/20)
- Poor communication/coordination between subcontractor and general contractor (24/20)

***For Infrastructural works (Group 16) subcontractors***

- Unexpected weather conditions (10/9)
- Design changes (10/8)
- Late material supply (10/8)
- Poor communication/coordination between subcontractor and general contractor (10/8)
- Poor management of the general contractor (10/8)
- Late approvals taken from owner/client or control department (10/8)

***For Ceramic works (Group 18) subcontractors***

- Poor communication/coordination between subcontractor and general contractor (14/13)
- Delays in payment (14/12)
- Design changes (14/12)
- Late material supply (14/12)
- Poor management of the general contractor (14/12)

The classification of the results summarized above is done with respect to the respondent work groups. Another classification of the analysis results can be done with respect to the items stated in the question. Table 6.29, in which this classification is represented, shows the items and the subcontractor work groups who selected these items as the most important cause of delay. The check marks in the table represent the work groups who selected the defined items as the most important cause of delay. The group numbers of the subcontractors are given in parenthesis. As it is seen in Table 6.29, although some of the factors are evaluated as the most important cause of delay with more than one subcontractor work groups, some factors are not evaluated by any of the respondents in the first order. The work item difference between the companies constitutes the main reason for this result.

Table 6.29 Classification of delay causes

Breakdown of equipment								
Conc/ Reinf/ forw	Mecha. (2)	Plaster/ Paint. (4)	Sanitar. (7)	Natur. gas (8)	Electri. (9)	Exca. (10)	Infrastr (16)	Ceram. (18)
Late approvals taken from owner/client or control department								
Conc/ Reinf/ forw	Mecha. (2)	Plaster/ Paint. (4)	Sanitar. (7)	Natur. gas (8)	Electri. (9)	Exca. (10)	Infrastr (16)	Ceram. (18)
			✓			✓		
Poor management of the general contractor								
Conc/ Reinf/ forw	Mecha. (2)	Plaster/ Paint. (4)	Sanitar. (7)	Natur. gas (8)	Electri. (9)	Exca. (10)	Infrastr (16)	Ceram. (18)
				✓				
Unexpected site conditions								
Conc/ Reinf/ forw	Mecha. (2)	Plaster/ Paint. (4)	Sanitar. (7)	Natur. gas (8)	Electri. (9)	Exca. (10)	Infrastr (16)	Ceram. (18)
Poor communication/coordination between subcontractor and general contractor								
Conc/ Reinf/ forw	Mecha. (2)	Plaster/ Paint. (4)	Sanitar. (7)	Natur. gas (8)	Electri. (9)	Exca. (10)	Infrastr (16)	Ceram. (18)
		✓			✓			✓
Late material supply								
Conc/ Reinf/ forw	Mecha. (2)	Plaster/ Paint. (4)	Sanitar. (7)	Natur. gas (8)	Electri. (9)	Exca. (10)	Infrastr (16)	Ceram. (18)
✓								
Design changes								
Conc/ Reinf/ forw	Mecha. (2)	Plaster/ Paint. (4)	Sanitar. (7)	Natur. gas (8)	Electri. (9)	Exca. (10)	Infrastr (16)	Ceram. (18)
	✓							
Unexpected weather conditions								
Conc/ Reinf/ forw	Mecha. (2)	Plaster/ Paint. (4)	Sanitar. (7)	Natur. gas (8)	Electri. (9)	Exca. (10)	Infrastr (16)	Ceram. (18)
							✓	
Delays in payment								
Conc/ Reinf/ forw	Mecha. (2)	Plaster/ Paint. (4)	Sanitar. (7)	Natur. gas (8)	Electri. (9)	Exca. (10)	Infrastr (16)	Ceram. (18)



### **6.3.3 Crosstabs Analysis of Question 26**

Question 26 is about the possible causes of disputes between the subcontractor and general contractor. In this section of the chapter, each item of Question 26 is analyzed for different work groups specified in Table 6.27. The Crosstabs Analysis results give the number of the respondent work groups observed for each scale. Obtaining the maximum number of subcontractors in one of the scales specifies the general attitude of the work group about the importance of the item. The sum of the frequencies observed for “very important” and “important” scales are used for the comparison of the items. The lists prepared by the help of this comparison are given below according to the work groups. The numbers in the paranthesis represents the group number and the respondent number who scaled the item as “very important” and “important” (group member number/respondent frequency). Although the lists are prepared for specifying the first three important causes of disputes between the parties, more than three causes are listed in some work groups because of the same frequency number observed in the scales.

#### ***For Concrete/reinforcement/formwork (Group1) subcontractors***

- Subcontractor’s poor quality work (70/68)
- Delays in subcontractor payment (70/66)
- Not having written contract conditions (70/63)

#### ***For Mechanical works (Group 2) subcontractors***

- Delays in subcontractor payment (33/31)
- Having inadequate definition of responsibility for parties (33/29)
- Subcontractor’s poor quality work (33/28)

***For Plastering/Painting works (Group 4) subcontractors***

- Delays in subcontractor payment (30/29)
- Subcontractor's poor quality work (30/28)
- Having inadequate work scope definition (30/26)

***For Sanitary works (Group 7) subcontractors***

- Delays in subcontractor payment (21/19)
- Subcontractor's poor quality work (21/18)
- Unclear definition of the party who will take care of cost changes (21/17)
- Delays in hand over of the site (21/17)
- Not having written contract conditions (21/17)

***For Natural Gas works (Group 8) subcontractors***

- Changes made by contractors in work schedule/scope (10/10)
- Unclear definition of the party who will take care of cost changes (10/10)
- Delays in subcontractor payment (10/9)
- Subcontractor's poor quality work (10/9)
- Having inadequate definition of responsibility for parties (10/9)
- Having inadequate work scope definition (10/9)
- Not having written contract conditions (10/9)

***For Electrical works (Group 9) subcontractors***

- Having inadequate definition of responsibility for parties (15/14)

- Delays in subcontractor payment (15/13)
- Unclear definition of the party who will take care of cost changes (15/13)

***For Excavation works (Group 10) subcontractors***

- Delays in subcontractor payment (24/24)
- Subcontractor's poor quality work (24/22)
- Not having written contract conditions (24/21)

***For Infrastructural works (Group 16) subcontractors***

- Having inadequate definition of responsibility for parties (10/10)
- Having inadequate work scope definition (10/10)
- Subcontractor's poor quality work (10/9)
- Changes made by contractors in work schedule/scope (10/9)
- Not having written contract conditions (10/9)

***For Ceramic works (Group 18) subcontractors***

- Subcontractor's poor quality work (14/14)
- Delays in subcontractor payment (14/14)
- Having inadequate work scope definition (14/13)
- Unclear definition of the party who will take care of cost changes (14/13)

The results listed above are grouped according to the work groups of the respondents. Another classification of these items is made with respect to the items of the question. These results are given in Table 6.30.

Table 6.30 Classification of dispute causes

Subcontractor's poor quality work								
Conc/ Reinf/ forw	Mecha. (2)	Plaster/ Paint. (4)	Sanitar. (7)	Natur. gas (8)	Electri. (9)	Exca. (10)	Infrastr (16)	Ceram. (18)
✓								✓
Changes made by contractors in work schedule/scope								
Conc/ Reinf/ forw	Mecha. (2)	Plaster/ Paint. (4)	Sanitar. (7)	Natur. gas (8)	Electri. (9)	Exca. (10)	Infrastr (16)	Ceram. (18)
				✓				
Having inadequate definition of responsibility for parties								
Conc/ Reinf/ forw	Mecha. (2)	Plaster/ Paint. (4)	Sanitar. (7)	Natur. gas (8)	Electri. (9)	Exca. (10)	Infrastr (16)	Ceram. (18)
					✓		✓	
Having unexpected site conditions								
Conc/ Reinf/ forw	Mecha. (2)	Plaster/ Paint. (4)	Sanitar. (7)	Natur. gas (8)	Electri. (9)	Exca. (10)	Infrastr (16)	Ceram. (18)
Having inadequate work scope definition								
Conc/ Reinf/ forw	Mecha. (2)	Plaster/ Paint. (4)	Sanitar. (7)	Natur. gas (8)	Electri. (9)	Exca. (10)	Infrastr (16)	Ceram. (18)
							✓	
Unclear definition of the party who will take care of cost changes								
Conc/ Reinf/ forw	Mecha. (2)	Plaster/ Paint. (4)	Sanitar. (7)	Natur. gas (8)	Electri. (9)	Exca. (10)	Infrastr (16)	Ceram. (18)
				✓				
Delays in hand over of the site								
Conc/ Reinf/ forw	Mecha. (2)	Plaster/ Paint. (4)	Sanitar. (7)	Natur. gas (8)	Electri. (9)	Exca. (10)	Infrastr (16)	Ceram. (18)
Delays in subcontractor payment								
Conc/ Reinf/ forw	Mecha. (2)	Plaster/ Paint. (4)	Sanitar. (7)	Natur. gas (8)	Electri. (9)	Exca. (10)	Infrastr (16)	Ceram. (18)
	✓	✓	✓			✓		✓
Poor application of site safety rules by subcontractors								
Conc/ Reinf/ forw	Mecha. (2)	Plaster/ Paint. (4)	Sanitar. (7)	Natur. gas (8)	Electri. (9)	Exca. (10)	Infrastr (16)	Ceram. (18)

Table 6.30 (continued)

Disagreement between the parties about the performed work amount								
Conc/ Reinf/ forw	Mecha. (2)	Plaster/ Paint. (4)	Sanitar. (7)	Natur. gas (8)	Electri. (9)	Exca. (10)	Infrastr (16)	Ceram. (18)
Not having written contract conditions								
Conc/ Reinf/ forw	Mecha. (2)	Plaster/ Paint. (4)	Sanitar. (7)	Natur. gas (8)	Electri. (9)	Exca. (10)	Infrastr (16)	Ceram. (18)

The work groups who evaluated the mentioned factor as the most important item are specified by the check marks in the table. As it is seen in Table 6.30, some of the defined causes are not evaluated as important while some items are ordered in the first place by more than one group. "Delays in subcontractor payment" is the most important cause of dispute that is evaluated by most of the subcontractor work groups.

## **CHAPTER VII**

### **CONCLUSIONS**

#### **7.1 Conclusion**

The purpose of this study is to gain some insight about the subcontracting system applications and the subcontractors in Turkey. Within the first three chapters of this thesis, literature research covering the stages of subcontracting systems is given. The subjects described in these chapters are in accordance with the applications that are practiced in Turkey. The system is mainly analyzed by a survey that was conducted among the subcontractors in Turkey. Results of the personal interviews held with general contractors supported the data acquired by this survey. In chapters IV, V, and VI of this thesis the research method, statistics obtained with the questionnaire, and the interview results are specified.

General contractors are used as a step for distributing the questionnaires. Most important reason for preferring this method is to base this survey on subcontractors who are taxpayers and have legal obligations like preparing invoices and paying tax stoppages. General contractors selected the respondents among their subcontractors who have the mentioned properties and these are the companies who filled the questionnaires. None of the respondents from any region are specially chosen for this survey. So, what must be kept on mind in discussing the derived results is that the number and region of the subcontracting companies is limited when all the firms in Turkey are considered.

The conclusions derived from this study can be listed as follows:

- The general profile of the subcontractors described by the help of the questionnaire shows that most of the companies involved in the system have 1-5 years experience in construction sector. This period is generally not enough for being highly specialized in specific work groups. Thus one of the most important reasons of subcontracting, which is “to provide higher quality standards by working with a specialized team”, is generally not achieved in Turkey. The companies having work experience for more than 10 years represent the group of subcontractors that also work as general contractors in projects.
- Most of the respondent subcontractors are established as limited company because of the legal advantages. These types of companies have less financial and tax duties when compared with the others.
- It is observed that subcontractors aim to employ minimum number of permanent personnel. The number range of the technical, administrative, skilled and unskilled labours is 0-10. These results show that the subcontracting companies are generally small or medium sized from personnel point of view.
- Most of the respondent subcontractors are employed in building constructions. “Concrete/reinforcement/formwork subcontractors” is the dominant work group that answered the questionnaire. 28 different work groups are used in this research. As highly specialization is not achieved in most of the subcontractors, it observed that companies undertake jobs in more than one work group. This is specially practiced in work groups such as concrete/formwork/reinforcement, plastering, painting, and masonry.

- The purpose of establishment of most of the subcontracting companies is to undertake projects as a general contractor in future. When the firms believe that they have adequate skill and experience, they take part as a subcontractor only in large-scale projects otherwise they undertake projects as general contractors. Having higher profit margin in works and being in direct relation with the owner (client) are the two important reasons for making the preference of working as a contractor. In this research, 50% of the respondent subcontractors work as a general contractor in projects also. The firms' inadequate financial situation in order to take risks for the whole project is the most important reason for the companies to engage in projects as subcontractors.
- Subcontracting system in Turkey is affected mostly by the personal relationship between the general contractor and the subcontractor. The mutual trust between the parties, having worked together previously, and confidence in the subcontractors are the factors that are effective in the stages of the system such as prequalification of the subcontractor and subcontract awarding. Another method that is commonly used for employing the subcontractors is to take the recommendations of the owner (client) or other contractors into account. After specifying the possible subcontractors that may be employed for that project, their bid prices are evaluated by competitive bidding. References of the companies competing with each other are important issues in making the decision for subcontractor selection.
- After making the subcontractor selection, the process turns into negotiation. These negotiations that take place between the parties may change the bid price given by the subcontractors. So the bargain stage between the parties is an important factor that determines the final subcontract price.



- Most of the respondent companies do not work as subcontractors in international projects. Those who were employed stated that working with the contractor who performs in foreign countries is the most important reason of involving in international projects. Having high and uncertain rate of inflation in Turkey is another factor that is taken into account in making this decision.
- Although the general contractors with which the personal interviews are held state that the owner (client) does not affect the subcontractor selection, 83% of the respondent subcontractors answered to this question as the opposite.
- One of the disadvantages that are faced in the subcontracting system in Turkey is the usage of oral agreements. Only 60% of the respondent subcontractors answered that they use written contracts for every kind of work that are subcontracted. This percentage is expected to be higher in an efficient subcontracting system because most of the problems and delays that occur during the project life are originated from the usage of oral agreements.
- The subcontracts that are used in the subcontracting system is classified in two ways; first is according to the methods the subcontractors are paid and second is according to the kind of work that subcontracts involve. The way in which the subcontractors will be paid is affected with the kind of the work that is subcontracted. In “labour only” type of subcontracts, general contractor supplies all the material and necessary equipment. In “labour plus material” type of subcontracts material is supplied by the subcontractors. General contractors prefer to pay to their subcontractors by using the rates or prices quoted in the subcontracts. Thus it can be concluded that “unit price” subcontracts are the most preferred type for “labour only” and “labour plus material” type of subcontracts.

- 86% of the respondent subcontractors stated that they give securities to the general contractors in order to prevent the occurrence of some problems between the parties like quitting the work. Bank guarantee letter and retention are the two types of securities that are generally used. The kind of the subcontract is an effective factor in selecting the security type. Subcontractors receive back their securities from general contractors within 30 days after the final acceptance. It is observed that subcontractors do not have specific problems about this repayment period.
  
- Three project success criteria are defined for the respondent subcontractors. 54,9% of the subcontracting companies assesses “to complete the project in conformance with quality standards” as the most important performance determinant of success in a project. It is observed as a result of the Crosstabs Analysis that the order of importance of the three factors may differ according to the work groups.
  
- Most of the respondent subcontractors assessed poor communication/coordination between the parties as the most important cause of delay. Late approvals taken from owner/client or control department, poor management of the general contractor, late material supply, design changes, delays in payment, not having defined work schedule and the disputes between the parties are the other causes that may lead to delays in project completion. The most important cause of delay evaluated by different subcontractor work groups changes because of the nature of that specific work item. Concrete/reinforcement/formwork subcontractors evaluated “late material supply”, mechanical works subcontractors evaluated “design changes”, sanitary and excavation works subcontractors evaluated “late approvals taken from owner/client or control department”, natural gas works subcontractors evaluated “poor management of the general contractor”, infrastructural works

subcontractors evaluated “unexpected weather conditions” as the most important cause of delays in a project. These results are obtained by the Crosstabs Analysis made for the subcontractor work groups that have respondent number greater than 10.

➤ In this research, the responsibilities and duties of the parties are also analyzed. Most of the respondent subcontractors agree with the results given below:

1. In the subcontracting system that is utilized in Turkey, contractors monitor the performance of its subcontractors including the cash flow between the parties.
2. General contractors must have positive attitude for satisfying the needs of their subcontractors because the failure of the subcontractors working in the project means the failure of the general contractor.
3. The general contractor has the authority to direct the subcontractor when and where to work. He also has the right to check the number and skill of the workers that are employed by the subcontractor. Subcontractors have the right to use sub-subcontractors for the work items.
4. The subcontractors do not usually receive their progress payments within the time specified in the contract clauses. This is mainly because

about these details. Without the approval of the subcontractors, the general contractor cannot change this schedule and sequence of works, suspend or delay subcontracted work without paying indemnifying cost.

6. The subcontractors cannot propose any claims for the inequities that they experience from the general contractors solely due to the possibility of working with the same contractor at future projects.
7. The prices submitted by the subcontractors on similar jobs may show great fluctuations with respect to the general contractor being involved in the project.

➤ As every project is unique with its scope and its parties, various causes of disputes may be faced in construction process. Majority of the respondent subcontractors evaluated “delays in subcontractor payments” as the most important cause of dispute between the parties. Subcontractor’s poor quality work, not having written contract conditions, having inadequate definition of responsibility for parties, having inadequate work scope definition, unclear definition of the party who will take care of the cost changes, changes made by the contractors in work schedule/scope, disagreement between the parties about the performed work amount are the other dispute causes that are commonly faced in subcontracting system. Among the subcontractors that are selected for the Crosstabs Analysis, concrete/reinforcement/formwork and ceramic works subcontractors evaluated “subcontractor’s poor quality work”, electrical and infrastructural works subcontractors evaluated “having inadequate definition of responsibility for parties” as the most important cause of dispute. The evaluation made by the other group of subcontractors is same with the result of the majority of the respondents, as “delays in subcontractor payments”.

- General tendency among the subcontractors is to solve the disputes between the parties by the negotiations made with the general contractor. It is observed that the personal relationship between the parties also has a vital role in dispute settlement.

## **7.2 Further Recommendations**

- The results of the research show that, in spite of high degree of its usage, subcontracting system in Turkey must be restructured in order to work with highly specialized companies. Thus, more experienced and skilful subcontractors will be involved in the projects. This situation will also be helpful to the general contractors from the quality point of view.
- Traditional procedure of the owner/client paying to the general contractor and the general contractor paying to its subcontractors slows the cash flow of the subcontractors. Thus, problems arise about these delays in payments and this situation declines the efficiency of the parties involved in the project. Direct payment to subcontractors may be used for the important work items that are subcontracted. This method will eliminate most of the disputes between the parties and delays in the projects period.
- General contractors and subcontractors should carefully review all aspects of each project. Subcontractors should not enter into subcontracts unless they are aware of all the conditions. Unethical practices should be strongly discouraged by subcontractors and/or general contractors. This will be helpful in improving the image of the construction industry.

- Making further studies for the subcontractors working in different regions of Turkey will provide more information about the subcontracting system. Periodic researches made about the subcontractors will specify the improvement of the subcontracting system together with the changing profile of the subcontracting companies.



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## APPENDIX

### SAMPLE QUESTIONNAIRE



ORTA DOĞU TEKNİK ÜNİVERSİTESİ - MIDDLE EAST TECHNICAL UNIVERSITY  
İNŞAAT MÜHENDİSLİĞİ BÖLÜMÜ - CIVIL ENGINEERING DEPARTMENT  
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Ankara, 12 Haziran 1997

Sayın Firma Yetkilisi,

ODTÜ İnşaat Mühendisliği Bölümü, Yapı İşletmesi Dalı Yüksek Lisans Programı öğrencilerinden Ebru Gökçek'in sürdürdüğü "Türk İnşaat Sektöründeki Taahhüt Sistemi ve Sorunları" konulu tez çalışmasında veri tabanı olarak kullanılmak üzere hazırlanan anket formu ilişikte sunulmaktadır.

Bahis konusu bu anketin, firmanızın üst düzey bir yetkilisi tarafından yanıtlanarak mümkün olan en kısa sürede tarafımıza iade edilmesi, Türk Taahhüt Sisteminin sağlıklı bir şekilde incelenmesine olanak sağlayacaktır.

Firmalarca verilecek tüm yanıtlar ve elde edilecek bulgular, gizlilik kuralları içerisinde değerlendirilecek olup sadece akademik amaçlar için kullanılacaktır. Bu kapsamda, firma adları herhangi bir anlam ifade etmeyeceğinden sorulmasına gerek dahi duyulmamıştır.

Yoğun çalışma temposu içerisinde, anketimize zaman ayırarak vereceğiniz yanıt ve değerli yorumlarınıza ve bizden esirgemeyeceğinizi umduğumuz ilgi ve yardımınıza şimdiden teşekkür ederiz. Saygılarımızla.

Y. Doç. Dr. Metin ARIKAN  
ODTÜ- İnş. Müh. Bölümü  
Tez Yöneticisi

Doç. Dr. Talat BİRGÖNÜL  
ODTÜ- İnş. Müh. Bölümü  
Yardımcı Tez Yöneticisi

**Ek:** Anket Formu

**Anket formlarının iade edileceği adres:**

Y. Doç. Dr. Metin ARIKAN  
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**Bilgi için gerekli olabilecek telefon numaraları:**

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## QUESTIONS FOR SUBCONTRACTORS

1. Specify the age of your subcontracting firm.

- (1)  Less than 1 year
- (2)  1 - 5 years
- (3)  6 - 10 years
- (4)  More than 10 years

2. Specify the type of your company.

- (1)  Sole proprietorship
- (2)  Unincorporated company
- (3)  Unlimited company
- (4)  Limited company
- (5)  Joint-stock corporation

3. What is the total value of works performed in 1996? (in billion TL)

- (1)  Less than 20
- (2)  20 - 50
- (3)  50 - 100
- (4)  100 - 500
- (5)  Over 500

4. Specify the number of permanent workers in your firm including all sites.

Technical personnel : \_\_\_\_\_

Administrative personnel : \_\_\_\_\_

Skilled labours : \_\_\_\_\_ Unskilled labours : \_\_\_\_\_

5

5. Please specify the construction types at which your firm works as a subcontractor.

- (1)  Engineering structures (dams, bridges, railways, airports, tunnels, sewerage systems, etc.) Please specify \_\_\_\_\_
- (2)  Motorways
- (3)  Building construction (houses, offices, schools, hospitals, hotels, etc.)
- (4)  Industrial construction (industrial facilities, reactors)  
 Other (Please specify)\_\_\_\_\_

6. Please write at most three groups of work that your firm performs in the construction type(s) you specified in Question 5. (Like concrete, formwork, excavation, mechanical works, plastering, etc.)

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_

7. Has your subcontracting firm ever worked as a contractor for any project?

- (1)  No (Please skip to Question 9)
- (2)  Yes (Please do not answer Question 9)

9. Please evaluate the reasons given below for working as a subcontractor instead of being a contractor. Please mark "X" for the most appropriate alternative. (1. Very important 2. Important 3. No effect 4. Unimportant 5. Worthless)

	1	2	3	4	5
A) Not having adequate contracting license for the type of the project					
B) The firms' inadequate financial situation in order to take risks for the whole project					
C) Not having enough bonds necessary for making contracts					
D) Not having enough references for being a contractor					
E) Not having adequate technical personnel and equipment					
F) Not being able to be involved in projects from first hand					
G) Other (Please specify)					
H) Other (Please specify)					

10. What kinds of methods does your company use in order to undertake a project? (You can mark more than one alternative)

12. Please evaluate the possible reasons given below for working in international projects as a subcontractor. Please mark "X" for the most appropriate alternative. (1. Very important 2. Important 3. No effect 4. Unimportant 5. Worthless)

	1	2	3	4	5
A) Having less financial risk in contracts made in foreign currency					
B) Having high and uncertain rate of inflation in Turkey					
C) Market stagnation and lack of demand in Turkey					
D) Working with the contractor who performs in international projects.					
E) Having new working areas by international projects.					
F) Other (Please specify)					
G) Other (Please specify)					

13. Please evaluate the possible factors given below that may affect your decision for to bid or not. Please mark "X" for the most appropriate alternative. (1. Very important 2. Important 3. No effect 4. Unimportant 5. Worthless)

	1	2	3	4	5
A) Need for work					
B) Number of competitors tendering					
C) Experience in such projects					
D) Availability of qualified staff and equipment					
E) Project location					
F) Contract type and possibility of higher profit margin					
G) Competitor firms tendering					
H) Other (Please specify)					
I) Other (Please specify)					

5

14. Does the owner/client affect the selection of subcontractors?

(1)  Yes

(2)  No

15. Please evaluate the criteria given below by considering their affect in subcontractor selection in Turkey. Please mark "X" for the most appropriate alternative. (1. Very important 2. Important 3. No effect 4. Unimportant 5. Worthless)

	1	2	3	4	5
A) Previous performance and references of subcontractors					
B) Financial strength of subcontractors					
C) Subcontracting firms' location					
D) Project team's expertise					
E) Low price given by the subcontractor					
F) Availability of qualified staff and equipment					
G) Other (Please specify)					
H) Other (Please specify)					

16. Give the percentage of the subcontracts made between your subcontracting firm and general contractor as written or oral.

\* Written subcontracts : % \_\_\_\_\_

\* Oral agreements : % \_\_\_\_\_

17. As a subcontractor, what type of subcontracts do you use for works that includes no material supply by general contractors? (subcontracted as labour plus material) Please answer by giving percentage.

\* Unit price : % \_\_\_\_\_

\* Lump sum : % \_\_\_\_\_

\* Cost plus fee : % \_\_\_\_\_

☞

**18. As a subcontractor, what type of subcontracts do you use for works that includes material supply by general contractor? (subcontracted as labour only) Please answer by giving percentage.**

\* Unit price : % \_\_\_\_\_

\* Lump sum : % \_\_\_\_\_

\* Cost plus fee : % \_\_\_\_\_

**19. Does the initial bid price given by your subcontracting firm differ until the subcontract is made?**

- (1)  It remains always the same.
- (2)  It remains same except for scope changes.
- (3)  It may differ after bargain made by general contractor.
- (4)  It may be updated at the end of the period in which the bid prices are valid.
- Other (Please specify) \_\_\_\_\_

**20. Does your firm provide any securities (retention or bank guarantee letters) to the contractors for projects?**

- (1)  Yes
- (2)  No (Please skip to Question 23)

**21. Please specify type of your security. (You can mark more than one**

22. When do you generally receive back your retention or bank guarantee letter from the general contractor?

- (1)  Up to 30 days after final acceptance
- (2)  Up to 6 months after final acceptance
- (3)  Up to 1 year after final acceptance
- (4)  More than 1 year after final acceptance

23. What objectives do you consider to be the performance determinants of success for a project? Please scale the objectives from 1 to 3. (Give 1 for the most important and 3 for the least important one)

23.1 — To complete the project within the specified period

23.2 — To complete the project within budget

23.3 — To complete the project in conformance with quality standards

24. Please evaluate the possible causes of delays given below. Please mark "X" for the most appropriate alternative. (1. Very important 2. Important 3. No effect 4. Unimportant 5. Worthless)

	1	2	3	4	5
A) Breakdown of equipment					
B) Late approvals taken from owner/client or control department					
C) Poor management of the general contractor					
D) Unexpected site conditions					
E) Poor communication / coordination between subcontractor and general contractor					
F) Late material supply					
G) Design changes					
H) Unexpected weather conditions					
I) Delays in payment					
J) Other (Please specify)					



25. Please evaluate the given conditions by taking into account your experience and your relationship with the general contractors. Please mark " X " for the most appropriate alternative. (1.Strongly disagree 2.Disagree 3.Neutral (No opinion) 4. Agree 5.Strongly agree)

	1	2	3	4	5
A) Contractors monitor the performance of its subcontractors including their financial performance					
B) Contractors have positive attitude for satisfying the needs of subcontractors.					
C) The general contractor has the authority to direct the subcontractor when and where to work.					
D) Without the approval of the subcontractor, the general contractor may change the schedule and sequence of works, suspend or delay any subcontracted work without paying any indemnifying cost.					
E) Contractor has the right to check the number and capacity of subcontractor workers on site.					
F) The subcontractors cannot propose any claims for the inequities that they experience from the general contractor due to the possibility of working with the same contractor at future projects.					
G) The subcontractors are compelled to sign the subcontract being imposed by the general contractor.					
H) The subcontractors cannot suggest any kind of changes in the clauses of the subcontract.					
I) The subcontractors usually receive their progress payments within the time specified in the subcontract.					
J) Payment to subcontractors is delayed because the general contractor diverts the funds to other areas of its own business.					
K) The prices submitted by the subcontractors on similar jobs may show great fluctuations with respect to the general contractor being involved in the project.					
L) Contractors handle the coordination of the subcontractors working in the same project.					
M) Subcontractors have the right to use sub-subcontractors for the construction process.					
N) No contractual relationship exists between owner/client and subcontractor.					
O) Subcontractor bears the full responsibility for any kind of accidents and damages given to third parties.					
P) Subcontracting system is the fundamental element of the Turkish Construction Industry.					

26. Please evaluate the possible causes of disputes between your firm and general contractor. Please mark "X" for the most appropriate alternative.

(1. Very important 2. Important 3. No effect 4. Unimportant 5. Worthless)

	1	2	3	4	5
A) Subcontractor's poor quality work					
B) Changes made by contractors in work schedule/scope					
C) Having inadequate definition of responsibility for parties					
D) Having unexpected site conditions					
E) Having inadequate work scope definition					
F) Unclear definition of the party who will take care of cost changes					
G) Delays in hand over of the site					
H) Delays in subcontractor payment					
I) Poor application of site safety rules by subcontractor					
J) Disagreement between the parties regarding the quantity of work performed					
K) Not having a written subcontract					
L) Other (Please specify)					
M) Other (Please specify)					

27. What is the preferred method for solving disputes with general contractors?

- (1)  Legal courts
- (2)  Using arbitration
- (3)  Negotiations made with contractors
- Other (Please specify) \_\_\_\_\_

**Thank you**

## TAŞERON FİRMALAR İÇİN HAZIRLANAN ANKET SORULARI

1. Şirketiniz ne kadar süredir taşeron olarak faaliyet göstermektedir?

- 1 yıldan az
- 1- 5 yıl
- 6 -10 yıl
- 10 yıldan fazla

2. Taşeron firmanızın ticari türünü belirtiniz.

- Şahıs şirketi
- Adi ortaklık
- Kollektif şirket
- Limited şirket
- Anonim şirket

3. Şirketinizin 1996 yılı içerisinde taahhüt ettiği tüm işlerin yaklaşık değeri nedir?

(Seçenekler milyar TL olarak verilmiştir.)

- 20' den az
- 20 - 50 arası
- 50 - 100 arası
- 100 - 500 arası
- 500' den fazla

4. Şirketinizde, şantiye elemanları dahil, çalışan sürekli personel sayısını belirtiniz.

Teknik personel : \_\_\_\_\_

İdari personel : \_\_\_\_\_

Çalışan sürekli usta : \_\_\_\_\_ Sürekli düz işçi: \_\_\_\_\_

5. Şirketiniz genellikle hangi tip projelerde taşeron olarak çalışmaktadır?

Özel yapı projeleri ( baraj, köprü, demiryolu, havaalanı, tünel, liman, kanalizasyon sistemleri, su arıtma vb.) (Lütfen belirtiniz) \_\_\_\_\_

Yol projeleri

Bina projeleri ( konut, okul, üniversite, hastane, otel, kültür merkezleri,vb.)

Endüstriyel yapı projeleri ( fabrika, rafineri, enerji santrali, vb.)

Diğer ( Lütfen belirtiniz ) \_\_\_\_\_

6. Şirketinizin Soru 5'de belirttiğiniz projeler kapsamında uğraştığı, ana iş kalemlerini yazınız. Lütfen en fazla 3 iş grubunu gösteriniz. ( beton, kalıp, demir, kazı, mekanik işler, sıhhi tesisat, sıva, vb. gibi )

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

7. Firmanız taşeron olarak çalışmasının yanı sıra müteahhit firma olarak da faaliyet göstermekte midir?

Hayır (Lütfen soru 9'a geçiniz)

Evet (Lütfen soru 9'u boş bırakınız)

8. Müteahhit firma olarak çalışmanızın sebebini belirtiniz. \_\_\_\_\_

\_\_\_\_\_

9. Firmanızın müteahhit olarak çalışmak yerine taşeronluk yapmasının nedenlerini, aşağıda verilen seçenekleri kullanarak değerlendiriniz. Size en uygun olan seçeneğe ait kutuya ' X ' koyunuz. (1. Çok önemli 2. Önemli 3.Etkisi yok 4. Önemsiz 5. Çok önemsiz)

	1	2	3	4	5
A) Firmanın yeterli seviyede müteahhitlik karnesine sahip olmaması					
B) Firmanın mali durumunun projenin tümünde oluşabilecek riskleri karşılayabilmek için uygun olmaması					
C) Firmanın müteahhitlik işleri için gerekli olan düzeyde teminat bulamaması					
D) Müteahhitlik işleri yapabilmek için firma referanslarının yetersiz olması					
E) Firmanın yeterli teknik eleman ve ekipmana sahip olmaması					
F) Firmanın birinci elden iş alamaması					
G) Diğer (Lütfen belirtiniz)					
H) Diğer (Lütfen belirtiniz)					

10. Aşağıdakilerden hangisi şirketinizin iş almak için kullandığı yöntemlerdendir?

(Birden fazla seçeneği işaretleyebilirsiniz)

- Kişisel bağlantıları kullanarak (politika, hemşehrilik, aynı okul mezunu olma, vb.)
- İş sahiplerine yapılan tavsiyeler üzerine
- Reklam ve şirketi tanıttıcı dökümanlar sayesinde
- Müteahhit firmanın yaptığı piyasa araştırması sonucunda
- Diğer (Lütfen belirtiniz) \_\_\_\_\_

11. Şirketiniz taşeron olarak, yurtdışı projelerde çalıştı mı?

- Evet
- Hayır (Lütfen soru 13'e geçiniz)

12. Şirketinizin, taşeron firma olarak yurtdışı projelerde çalışma nedenlerini, aşağıdaki seçenekleri kullanarak değerlendiriniz. Size en uygun olan seçeneğe ait kutuya ' X ' koyunuz. (1. Çok önemli 2. Önemli 3. Etkisi yok 4. Önemsiz 5. Çok önemsiz)

	1	2	3	4	5
A) Döviz bazında yapılan işlerde, üstlenilen mali risklerin daha az olması					
B) Türkiye'de enflasyon oranının yüksek ve belirsiz olması					
C) İç piyasalardaki durgunluk ve talebin yetersiz olması					
D) Beraber çalışılan müteahhit firmanın, yurtdışında bir iş alması					
E) Firmanın kendisine yeni pazar imkanları yaratma isteği					
F) Diğer (Lütfen belirtiniz)					
G) Diğer (Lütfen belirtiniz)					

13. Yeni bir proje için teklif verme kararınızı etkileyebilecek nedenleri, aşağıdaki seçenekleri kullanarak değerlendiriniz. Size en uygun olan seçeneğe ait kutuya "X" koyunuz. (1. Çok önemli 2. Önemli 3. Etkisi yok 4. Önemsiz 5. Çok önemsiz)

	1	2	3	4	5
A) İşe maddi açıdan ihtiyaç duyulması					
B) İşe teklif veren rakip firma sayısı					
C) Tamamlanmış benzer projelerden elde edilen tecrübe					
D) Teknik eleman ve ekipmanın varlığı					
E) İşin coğrafi konumu					
F) Sözleşme tipi ve yüksek kâr olasılığı					
G) İşe hangi firmaların teklif verdiği					
H) Diğer (Lütfen belirtiniz)					
I) Diğer (Lütfen belirtiniz)					

14. Size göre taşeron firmaların müteahhit firma tarafından görevlendirilmelerinde, iş sahibinin bir etkisi olur mu?

- Evet  Hayır

15. Size göre; Türkiye'de taşeron seçimi yapılırken dikkat edilen kriterleri aşağıdaki seçenekleri kullanarak değerlendiriniz. Size en uygun olan seçeneğe ait kutuya ' X ' koyunuz. (1. Çok önemli 2. Önemli 3. Etkisi yok 4. Önemsiz 5. Çok önemsiz)

	1	2	3	4	5
A) Taşeronun önceden yaptığı işler ve referansları					
B) Taşeronun mali durumu					
C) Taşeronun projenin bulunduğu şehirde yerleşik olması					
D) Teknik kadronun deneyimli ve yeterli olması					
E) Taşeronun düşük fiyat vermesi					
F) Taşeronun işin gerektirdiği özel ihtisas ve ekipmana sahip olması					
G) Diğer (Lütfen belirtiniz)					
H) Diğer (Lütfen belirtiniz)					

5

16. Şirketiniz ve müteahhit firma arasında yapılan sözleşmelerin türünü yazılı ve sözlü olmak üzere yüzde cinsinden belirtiniz.

\* Yazılı sözleşmeler : % \_\_\_\_\_

\* Sözlü sözleşmeler : % \_\_\_\_\_

17. Müteahhit firmanın malzemeli olarak yaptırdığı işlerde, taşeron firma olarak hangi tip sözleşmeleri kullanıyorsunuz? Lütfen cevabınızı yüzde cinsinden belirtiniz.

\* Birim fiyat : % \_\_\_\_\_

\* Götürü usul : % \_\_\_\_\_

\* Maliyet + kâr : % \_\_\_\_\_

18. Müteahhit firmanın sadece işçilik taşeronluğu şeklinde verdiği işlerde, taşeron firma olarak hangi tip sözleşmeleri kullanıyorsunuz? Lütfen cevabınızı yüzde cinsinden belirtiniz.

\* Birim fiyat : % \_\_\_\_\_

\* Götürü usul : % \_\_\_\_\_

\* Maliyet + kâr : % \_\_\_\_\_

19. Firmanız tarafından verilen teklif fiyatları, sözleşme imzalanana kadar herhangi bir pazarlık ya da görüşme sonucunda değişir mi?

- Her zaman aynı kalır.
- İş tanımının değiştiği koşullar haricinde aynı kalır.
- Müteahhit firma ile yapılan pazarlık sonucunda değişebilir.
- Verilen teklifin geçerli olduğu süre sonunda güncelleştirilir.
- Diğer (Lütfen belirtiniz) \_\_\_\_\_

20. Yapılan işlerde şirketiniz, müteahhit firmaya herhangi bir teminat veriyor mu?

- Evet
- Hayır (Lütfen soru 23'e geçiniz)

5

21. Firmanız tarafından müteahhit firmaya verilen teminat cinsini belirtiniz.

(Birden fazla seçeneği işaretleyebilirsiniz)

- Banka teminat mektubu
- Hakedişlerden kesilen yüzde
- Nakit para
- Menkul değerler (çek, senet, devlet tahvili vb.gibi)
- Diğer (Lütfen belirtiniz) \_\_\_\_\_

22. Müteahhit firmalar tarafından alıkonulan teminat miktarları taşeron firmalara ne zaman geri verilir?

- Kesin kabulü takip eden 30 gün içinde
- Kesin kabulü takip eden 6 ay içinde
- Kesin kabulü takip eden 1 yıl içinde
- Kesin kabulü takip eden 1 yıldan daha uzun süre içinde

23. Aşağıdakilerden hangisi, firmanıza göre bir projenin başarılı sayılmasını belirleyecek en önemli etkidir? Lütfen seçenekleri 1'den 3'e kadar numaralandırınız. (Önemli seçeneğe 1 vererek başlayınız)

- İşin öngörülen süre içinde tamamlanması
- İşin öngörülen maliyet ile tamamlanması
- İşin kaliteden ödün verilmeksizin tamamlanmış olması

5



24. Tabloda belirtilen gecikme yaratabilecek sebepleri, aşağıda verilen seçenekleri kullanarak değerlendiriniz. Size en uygun olan seçeneğe ait kutuya "X" koyunuz.

(1. Çok önemli 2. Önemli 3. Etkisi yok 4. Önemsiz 5. Çok önemsiz)

	1	2	3	4	5
A) Makine ve ekipmanların bozulması					
B) İşveren ve kontrol birimlerinin geç onay vermeleri					
C) Müteahhit firmanın yetersiz yönetimi					
D) Beklenmeyen saha koşulları					
E) Taşeron ve müteahhit firma arasındaki iletişim/ koordinasyon eksikliği					
F) Malzeme teminindeki gecikmeler					
G) Proje değişiklikleri					
H) Beklenmeyen hava koşulları					
I) Ödemelerdeki gecikmeler					
J) Diğer (Lütfen belirtiniz)					

25. Aşağıdaki tabloda tanımlanan durumları, tecrübenizi ve piyasada geçerli olan koşulları gözönünde bulundurarak yorumlayınız. Size en uygun olan seçeneğe ait kutuya ' X ' koyunuz. (1-Kesinlikle katılmıyorum 2- Katılmıyorum 3- Fikrim yok 4- Katılıyorum 5-Kesinlikle katılıyorum)

	1	2	3	4	5
A) Müteahhit firmalar, taşeronların mali durumu ve her türlü çalışmalarını yakından takip eder.					
B) Müteahhit firmalar beraber çalıştıkları taşeronların istek ve ihtiyaçlarının karşılanması konusunda ılımlı bir tutum içindedirler.					
C) Müteahhit firmalar, taşeronun projenin hangi kısmında ve ne zaman çalışacağını kontrol etme ve yönetme hakkına sahiptir.					
D) Müteahhit firma herhangi bir ilave maliyet ödemeksizin, iş programını ve işin yapılma sırasını taşeronun onayını almaksızın değiştirebilir.					
E) Müteahhit firma, taşeron tarafından çalıştırılan personelin, iş yapımı sırasında yeterli olup olmadığını kontrol edebilir.					
F) Taşeronlar, müteahhit firmayla başka projelerde tekrar beraber çalışma olasılığı bulunduğundan, iş yapımı sırasında karşılaştıkları haksızlıklarla tam olarak mücadele edemezler.					
G) Taşeronlar müteahhit firmaların hazırladığı sözleşmeleri imzalamak zorunda bırakılırlar.					
H) Taşeronlar sözleşme koşullarının değiştirilmesi konusunda hiçbir talepte bulunamazlar.					
I) Taşerona hakediş ödemeleri genellikle sözleşmelerde belirtilen süre içinde yapılır.					
J) Taşerona yapılan ödemeler, müteahhit firmanın elindeki kaynakları diğer işlerine aktarması dolayısıyla geciktirilir.					
K) Taşeronların benzer projeler ve benzer işler için farklı müteahhitlere verecekleri fiyatlar değişik olabilir.					
L) Aynı proje kapsamında çalışan taşeronların iş programı ile ilgili koordinasyonu, müteahhit firma aracılığıyla sağlanır.					
M) Taşeron firmalar kendi sorumlulukları altındaki işlerin yapımı için de, bir alt taşeron kullanabilirler.					
N) Genellikle iş sahibi ve taşeron firma arasında yasal bağ oluşturacak hiçbir yazılı sözleşme yoktur.					
O) Taşeron, meydana gelecek iş kazalarından ve bu kazaların sebep olacağı her türlü zarar ve tazminattan tek başına sorumludur.					
P) Taşeronluk Sistemi, Türk İnşaat Endüstrisinin vazgeçilmez bir unsurudur.					

26. Taşeron firma ile müteahhit firma arasında oluşabilecek sorunların nedenlerini aşağıda verilen seçenekleri kullanarak değerlendiriniz. Size en uygun olan seçeneğe ait kutuya ' X ' koyunuz. (1. Çok önemli 2. Önemli 3.Etkisi yok 4. Önemsiz 5. Çok önemsiz)

	1	2	3	4	5
A) Taşeronun düşük kaliteli iş yapması					
B) Müteahhit firmanın iş programında/ kapsamında değişiklik yapması					
C) Sözleşmelerde taşeron firma ve müteahhit firma sorumluluklarının iyi tanımlanmamış olması					
D) Beklenmeyen saha koşullarının oluşması					
E) Müteahhit firma tarafından taşerona verilen iş tanımının iyi yapılmaması					
F) Maliyet artışlarının hangi tarafca üstlenileceğinin belirsiz olması					
G) Yer tesliminde gecikme olması					
H) Müteahhit firmanın ödemeleri geciktirmesi					
I) Taşeron firma tarafından yapılan işçi sağlığı ve güvenliği ile ilgili saha uygulamalarının yetersiz olması					
J) Yapılan iş miktarı konusunda taraflarca mutabakata varılamaması					
K) Taraflarca benimsenen anlaşma koşullarının yazılı olmaması					
L) Diğer (Lütfen belirtiniz)					