

Managing the Risk of Contractor Failure

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Abstract

The topic of contractor failure has become a major research domain since the beginning of the 1980s. Construction is a risky business with many features like long period of time, complicated process, financial intensity, environment and dynamic organizational structure. The aim of this paper is to find out the factors effecting contractor failure.

In the first phase contractor failure ratio for public procurement is found by investigating the data of the Turkish Ministry of Public Works and Settlement between the years 1999 and 2006. It is found that 10.5% of the public projects end in construction default. The second phase of the study involves a questionnaire survey to find out why construction companies fail in Turkey. The first part of the questionnaire includes the determinants used by Dun and Bradstreet as the causes of failure classified as organizational, environmental, and performance factors. The second part of the questionnaire includes questions about the organizational structure of the company.

It is found that the most effective causes of contractor failure are receivable difficulties, insufficient capital, lack of managerial experience, lack of business knowledge, and family problems. It is observed that ego problems, removing performance barriers, monitoring of performance, adaptation to modern work models, and clarified directions are found as major problem areas for the organizational structure of the company.

Keywords

Risk management, Construction industry, Contractor, Failures

1. Introduction

The topic of contractor failure has become a major research domain since the beginning of the 1980's. According to reports by Dun and Bradstreet more than 10000 contractors fail annually and the surety industry has lost \$3-4 billion between the years 1998 and 2003 (Levy, 2007).

In Turkey contractor default is common. When we analyze the data offered by the Ministry of Public Works and Settlement between the years 1999 and 2006, we find that failure liabilities amounted to was 2,032,656 million YTL, which constituted 10.67% of the total liabilities. The probability of contractor default appears to be high. A special paragraph is included in the Public Procurement law to protect public work agencies against the damage of contractor default. In section 2 and in the Articles 8, 9 and 10 there are articulated rules for the evaluation of economic and financial standing; Bank statements relating to the financial standing of the tenderer, The whole or required sections of the balance-sheet of the tenderer, A statement of the tenderer's overall turnover indicating his work volume, or documents indicating the volume of the work relating to the subject matter of the procurement proceedings.

Failures are not only related with the financial and economical statements also with the professional and technical qualifications. In the Article 10/ (b) the rules for the evaluation of professional and technical qualifications can be found. In addition, the Ministry of Public Works and Settlement requires a surety bond from the contractor in the amount of the 6% of the contract value. The special paragraph in the Public Procurement law includes clauses about documents needed to determine the financial state of the company, the professional and technical knowledge of the employees, the quality assurance program of the company, also the bidder has to submit a document to the effect that the company successfully completed at least one job that has a contract value of at least 70% of the contract in question.

Despite the measures specified in the Public Procurement Law, 10.5% of the projects end up with contractor default. Contractor default after completing 62% of the project on the average. There is therefore high probability of contractor default and a large amount of work that is not completed. Two questions need to be answered; why do construction companies fail in Turkey despite the strict measures included in the Public Procurement law? How can one prevent contractor default and the consequent damage?

The first phase of the study involves the calculation of the ratio of contractor failures over years to examine if failure rates have any impact on the Public Procurement. The second phase of the study involves a questionnaire survey to find out why construction companies fail in Turkey. The objective of this study is to find answers to these questions.

2. Risks Involved in Building Construction

Building construction process includes many risks. Risk is 'the potential for unwanted or negative consequences of an event or activity, a combination of hazard and exposure' (Zou et al., 2007). According to AS/NZS (Australia Standards/New Zealand Standards for risk management, 1999) 4360, risk is 'the chance of something happening that will have an impact on objectives may have a positive or negative effect'. According to Zou the risks in construction are risks related to the clients, risks related to the designers, risks related to the contractors, risks related to subcontractor/suppliers, risks related to government agencies, and external issues. The exploration of the risks discovered that most of the risks are related to contractors.

Risk in the construction industry cannot be eliminated but there are successful projects in which risks are effectively managed (Zou et al., 2007) or risk can be transferred to another party. The terms and conditions of the construction contract are identified by the owner and the contractor. These written agreements, which are signed by both contractor and owner, bind these two parties by defining relationships and responsibilities. When the owner signs a contract with the contractor, the risk is transferred to a surety company. A construction surety bond is used to transfer the risk (Kangari and Bakheet, 2001). Simply, a surety bond is an agreement under which a surety guarantees to another party that a third party will perform the contract in accordance with contract documents.

The surety bond in Turkey is different from the surety bond in the U.S. In Turkey, bonds protect the owner from financial loss. But in general this kind of surety bond does not cover the protection of the owner by ensuring the completion of the project in accordance with the terms and conditions of the contract documents.

3. Risk Management Methods

Another way to prevent damages that may be caused by contractor default is to manage project risks effectively. The process of risk management constitutes a systematic approach to taking control of projects and decreasing uncertainties (Mulcahy, 2003). There are numerous definitions of risk management. AS/NSZ 4360 (Australia Standards/New Zealand Standards for risk management, 1999) defines risk management as 'the culture, process and structures that are directed towards realizing potential opportunities whilst managing adverse effects'. PMBOK explains risk management as one of the nine focuses in project management and describes it as 'the process concerned with conducting risk management planning, identification, analysis, responses, and monitoring and control on a project'. We may also cite the definition of risk management as specified by ISO in *ISO/IEC guide73:2002: Coordinated activities to direct and control an organization with regard to risk. Note: Risk management generally includes risk assessment, risk treatment, risk acceptance and risk communication.*

According to Mulcahy there are five steps to risk management which are; risk management planning, risk identification, qualitative risk analysis/quantitative risk analysis, risk response planning and risk monitoring and control. To manage project risks effectively, first one should find out the risks of the project which means causes of business failure in this study.

4. Causes of Contractor Failure

While numerous researchers have studied success factors of construction companies, some claim that studying business failures is another way of understanding success (Köksal and Arditi, 2004). What can cause business failure? The failure risk in construction includes unexpected events such as natural disasters, unforeseen site conditions, material delivery delays, equipment breakdowns, and most importantly contractor default (Al-Sobie et al., 2005). Prime among these reasons is business failure which may be defined as the condition when a company's liabilities exceed its assets (Balcaen and Ooghe, 2004; Köksal and Arditi, 2004). While most researchers claim that business failure cannot be defined only by financial ratios, Sori claims that their findings suggest no clear patterns for the identification of failures except the financial ratios.

In addition to the accounting perspective, business failure can be equally defined from the legal and organizational perspectives (Kale and Arditi, 2005). Also Surety Association of America's (SAA) 2005 report claims that there are causes of contractor failure except accounting and economic conditions which are, unrealistic growth or change in the scope of business, character/management/personal issues, accounting issues/financial management problems, and other problems which point out to management problems (Levy, 2007). While some claim that business failures are caused by management mistakes (Holland, 1998), failures among newly established organizations are more commonly compared to older ones (Kale and Arditi, 2005). Others claim that failures are caused by factors that are not universal, but unique to a company's industry or culture (Charan and Useem, 2002). There are many researches about predicting the causes of business failure, but most of them point out that contractor default is one of the primary reasons of business failure.

Dun and Bradstreet's statistics include causes of contractor failure. Two determinants (organizational factors and environmental factors) and one symptom (performance factors) comprise the causes of

business failures. Determinants consist of organizational factors and environmental factors while performance factors consist of the symptoms (Köksal and Arditi, 2004). Organizational factors are associated with the human, organizational and financial capital of the company. Environmental factors can not be controlled by the organization but they can observe the effects of them on the company's performance so that they can adjust and improve the conditions of organizational factors. These are macroeconomic and natural factors. Organizational and environmental factors are the driving factors of performance of a construction company (Köksal and Arditi, 2004). Symptoms, which are performance related indicators, are the outputs of the input/output model for business failures. They are driven by environmental and organizational factors which are the determinants of the failure.

In this study the causes of contractor failure in Turkey are analysed according to the determinants and symptoms defined by Köksal and Arditi. Although each researcher has different definitions about causes of failure, most of them have parallel explanations about environmental or organizational causes. The questionnaire of Köksal and Arditi includes both common topics as environmental causes and organizational causes so the questionnaire in this study is based on that. There are some reasons excluded like the liability of newness and smallness by choosing companies which are older than 5 years. Causes of contractor default can be managerial defaults, too. Many managers do not have the experience or capability to manage change under increasingly complex conditions and rapidly changing organizations in which old ways of thinking and solving problems rarely work (Longenecker et al, 2007). In the second part of the questionnaire the managerial mistakes are found out by using the managerial causes by Longenecker et al.

5. Research Methodology

The questionnaire prepared for the investigation of failures included two sections consisting respectively of questions about the causes of the failure and questions about the organizational factors of the failure. Both sections of questions were answered by all participants.

While forming the questionnaire Dun and Bradstreet's form taken as a base. The first part of the questionnaire includes the determinants used by Dun and Bradstreet as the causes of failure classified as organizational, environmental and performance factors. In this part of the questionnaire the causes of contractor failure are listed and participants choose five of them which they think the most effective ones. In the second part of the questionnaire, the primary causes of managerial failure are investigated. After the classification is made by Longenecker et al (2007), the participants are asked to mark the level of implementation of the factor listed according to their companies.

So the questionnaire consists of;

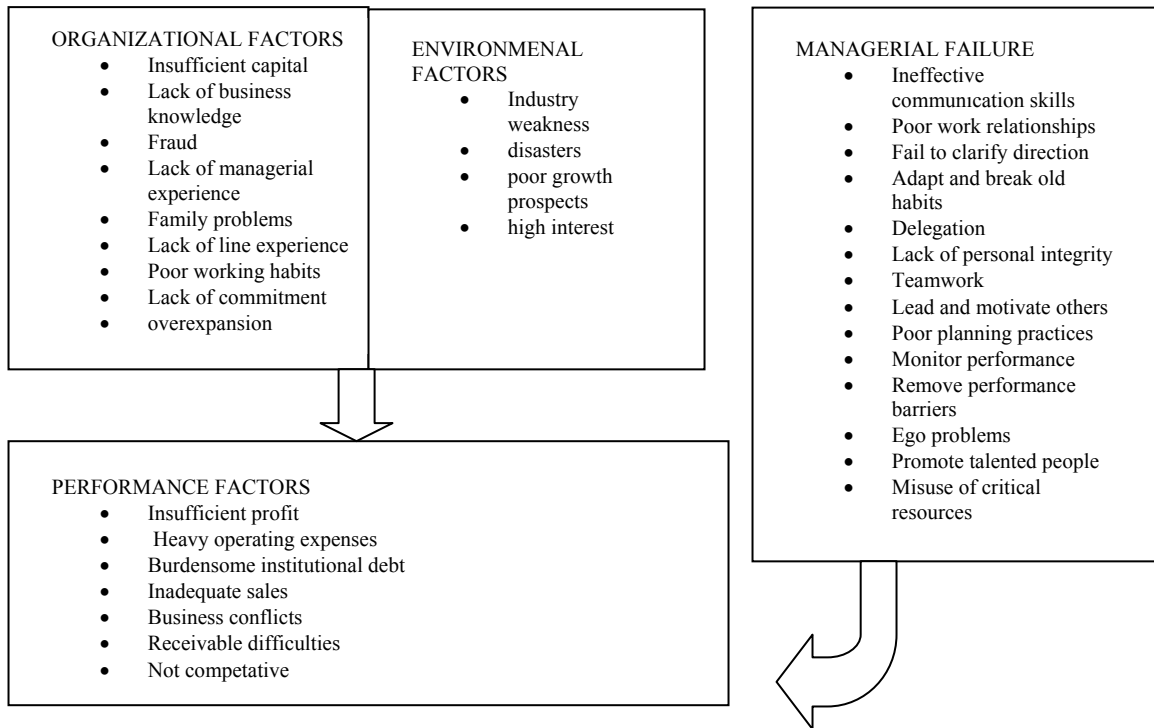


Figure 1: Causes of Failure

6. Findings and Analysis

25 participants took part in the study. These participants are chosen from owners or workers of construction companies, which are failed, randomly. The questionnaires were administrated to the participants by one of the following these methods; face to face, by mail and by e-mail.

Names, companies and other particularizing information were not included in the questionnaire owing to consideration of the privacy and legal issues. The only criteria employed in the selection of the participants aside from the requirement that they have failed, was that the company be older than 5 years. This criterion sewed to exclude factors deriving from the liability of newness and smallness.

To analyze the results of the questionnaires the tables are created for each of the two parts of the questionnaire. In the first part of the questionnaire the causes of failure are listed and participants choose 5 of them which they think the most effective ones. The most important cause is numbered as 1 in each line and the least important cause is numbered as 5.

In order to find the effect of each cause, the numeration is converted as the most important cause became 5 and the least important cause became 1. When the rated values are summed up, the highest value became the most effective cause of failure according to the answers of the questionnaire. In Table 1, it can be seen that the most important cause of contractor failure is receivable difficulties. According to the Pareto Principle, 80% of all failures is caused by 20% of all causes. When this principle is applied to the questionnaire, it is found out that first five rated causes of failure are the most important causes which are receivable difficulties, insufficient capital, lack of managerial experience, lack of business knowledge and family problems.

Table 1: Rated Values of the First Part of the Questionnaire

	CAUSE	RATE
1	Receivable difficulties	45
2	Insufficient capital	42
3	Lack of managerial experience	41
4	Lack of business knowledge	34
5	Family problems	33
6	Industry weakness	33
7	Insufficient profit	32
8	Burdensome institutional dept	24
9	Overexpansion	16
10	High interest rates	16
11	Heavy operating expenses	15
12	Poor working habits	13
13	Lack of line experience	12
14	Business conflicts	7
15	Not being competitive	7
16	Inadequate sales	2
17	Poor growth prospects	0
18	Disasters	0
19	Lack of commitment	0
20	Fraud	0

Receivable difficulties are a symptom of organizational or environmental and mostly related with another party. According to the interviews with the construction firms, this symptom is caused by environmental factors like crisis, industry weakness and organizational factors like fraud and insufficient capital of another party. The other four most effective causes of failure are all organizational factors like insufficient capital, lack of managerial experience, lack of business knowledge and family problems. This result showed that in Turkey organizational problems in construction firms have an important effect on failures.

In the second part of the questionnaire organizational structure of the construction firms is examined. The participants are asked to mark the level of implementation of the factor listed according to their companies, where 1 means inadequate and 5 means excellent. The results are listed and the average of the answers of all participants used to find out the level of implementation (Table 2).

Table 2: Rated Values of the Second Part of the Questionnaire

	FACTORS	AVERAGE
1	Ego problems	2,1
2	Removing performance barriers	2,4
3	Monitor performance	2,6
4	Adaptation to modern work models	2,6
5	Planning practices	2,8
6	Clarified directions	2,8
7	Communication skills	2,9
8	Lead and motivate others	2,9
9	Promoting talented people	2,9
10	Delegation	3
11	Work relationships between employees	3
12	Work experience of employees	3,3
13	Using critical resources to reach the target	3,3
14	Teamwork	3,4
15	Honesty and reliability	3,8

When these averages are analyzed, it can be seen that the major problem areas for the organizational structure of the company are ego problems, removing performance barriers, monitor performance, adaptation to modern work models and clarified directions. These results are not only showed us the problem areas, also highlighted why the most effective causes of contractor failures are caused by organizational factors.

7. Conclusion

It is argued in this study that contractor failures are very common and costly events in Turkey according to the data of Ministry of Public Works and Settlement between years 1999 and 2006. It is found out that 10.5 % of the public projects ended in contractor failures. The main causes of contractor failure are classified as organizational factors, environmental factors and performance factors. Contractor can not control the environmental factors but can eliminate or transfer the organizational and performance factors. A questionnaire is used to find out the causes of contractor failure in Turkey and organizational structure of the construction companies to find out what can be done to reduce the risk of failure.

This study is limited by a small number of participants because of the legal issues and psychological effects of failure on the people although the names and company names are not asked in the questionnaire. A generalization is not possible with this amount, but this paper described the current views of the contractors who has failed or worked for a failed company.

The results of the first part of the questionnaire shows us that most of the failures occurs because of five main reasons, receivable difficulties (12% of all failures), insufficient capital (11.2% of all failures), lack of managerial experience (11% of all failures), lack of business knowledge (9.1% of all failures) and family problems (8.8 % of all failures). A receivable difficulty is related with the performance factors and according to the discussions with the contractors mostly occurs because of the environmental factors like crisis or industry weakness. The study also shows that the other four important factors are related with the organizational factors mostly with the organizational structure of the company like lack of managerial experience, lack of business knowledge and family problems.

The findings of the second part of the questionnaire indicates that the major problem areas for the organizational structure of the company are ego problems, removing performance barriers, monitor performance, adaptation to modern work models and clarified directions. These results highlighted that the major contractor failures in Turkey occurs because of the organizational.

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