King Fahd University of Petroleum and Minerals

Construction Engineering and Management

Construction Contracting (CEM-520)

CAUSES OF CONTRACTOR'S FAILURES IN SAUDI ARABIA

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ABSTRACT

This thesis discusses the main causes of failure in the Construction industry in Saudi Arabia. A survey of 68 contractors from the entire Kingdom was undertaken. These contractors were classified by the Ministry of Housing and Public Works from grade one to four. The distribution of these contractors are as follows: 7 from grade one, 12 from grade two, 27 from grade three, and 22 from grade four.

The survey included 34 different causes of failure and their degree of importance. The severity factors of those causes were measured by their level of importance and were ranked according to the severity index for group one together, group two, and group three, and a combination of all respondents. A computer statistical package (SAS) was used to analyze the data.

A hypothesis that "grade one and two (group one), grade three (group two), and grade four (group three) generally agree on the ranking of severity indices "was tested and shown to hold true. It was concluded that lack of experience in the line of the work, neglect, poor estimation practices, bad decisions in regulating company's policy, and national slump in the economy are the most severe factors. Also, it was noted that grade three contactors give the most response, followed by grade four and then one and two. This reflects the true awareness of causes of failures among contractors.

INTRODUCTION

The construction business has very high risk. These risks, which could lead to failure, come from the sensitivity of the business to economic cycles, and from high levels of competition. Because there are large numbers of contractors, it is easy to establish a new firm. Since the entry into the construction business is easy, implementation could be easily poor and unorganized, which increases the probability of a contractor's failure.

In construction, there are three parties involved, namely, owner, consultant, and contractor. The relationship between these parties is adversarial because each party has goals, which conflict with the other parties' goals. For example, the owner wants his project to be of a good quality and low cost, but this reduce the profit of the contractor. The consultant wants the project to be safe and attractive which could cause both the contractor and the owner extra expenses. Also, the laborers hired by the contractor want their salary to be higher, which is not possible given the competitive prices in the construction business. The relation among parties could be a major source of contractor's failures.

There is no extra definition of the contractor's failure, however, it could be defined as when a business

1) Ceases operation following assignments due to the inability to continue construction.
2) Goes into bankruptcy due to failure of collecting money from customers
3) Voluntarily withdraws because of dissatisfaction with business or profit

The construction industry attracts many people because of their belief of high profit, but when they enter the business, they will feel the difficulty and complexity of it.

OBJECTIVE OF THE STUDY

The main objectives of this study are as follows:

- To undertake a comprehensive analysis of the most important factors that cause business failure among contractors.

- To identify and analyze the most severe factors causing contractor's failure in Saudi Arabia.

- To test the hypothesis that different grades of contractors, generally agree on the severity of failure.

LIMITATION OF THE STUDY

This study is limited to building and highway contractors who are qualified and registered in the Ministry of Housing and Public Works as of 25th of Muharam, 1413H. The contractors are from grades one to four in Saudi Arabia.

The technical failures of project are not covered in this study. The study is restricted to construction phase only.

CAUSES OF FAILURES

Previous Studies

Dun and Bradstreet Corp. identified five important causes of business failure in the construction industry as follows: Bad profit, Inadequate sales, Management incompetence and lack of experience, Loss at market and economic decline, and Difficulty collecting from customers.

In John Argenti's book, some causes of failure are stated as follows: Poor management, Neglect of accountancy information, company does not respond to change, Powerful constrains, Overtrade, Financial problems, Normal business hazard.

Thomas C. Schleifer identified 10 causes of construction business failures. The first five are related to business strategies, and the second five are related to accounting consideration.
They are as follows
1- Increasing project size, 2- Expanding in unfamiliar locations, 3- Replacing key personnel, 4- Moving into new construction, 5- Not maturing in management as business expands

6- Using poor accounting systems, 7- Evaluating project profit incorrectly or not in time, 8- Not controlling equipment costs, 9- Not billing or collecting effectively, and 10- Jumping between computerized accounting systems.

In the Study

The 34 causes, which are included in the questionnaire, are divided into four groups, namely, Managerial, Financial, Expansion, and Environmental Causes. These causes are as follows:

MANAGERIAL CAUSES

1. Lack of Experience in the Line of Work
2. Replace Key Personnel
3. Assigning Project Leader in the Site
4. Labor Productivity and Improvement
5. Bad Decisions in Regulating Company Policy
6. Use of Project Management Techniques
7. Company Organization
8. Procurement Practices

9. Claims
10. Internal Company Problems
11. Recruitment from One Country
12. Recruiting Multinational
13. Owner's Absence from the Company
14. Using Computer Applications
15. Frauds
16. Neglect

FINANCIAL CAUSES

1. Low Margin Profit Due To Competition
2. Cash Flow Management
3. Bill and Collecting Effectively
4. Poor Estimation Practices
5. Evaluate Project Profit in One Fiscal Year
6. Employee Benefits and Compensations
7. Controlling Equipment Cost and Usage

EXPANSION CAUSES

1. Expanding into New Geographic Locations
2. Opening a Regional Office
3. Increased Number of Projects
4. Increased Size of Projects
5. Change in the Type of Work
6. Lack of Managerial Maturity
7. Changes from private to Public or Vice Versa

ENVIRONMENTAL CAUSES

1. National Slump in the Economy
2. Construction Industry Regulation in Saudi Arabia
3. Owner Involvement in Construction Phase
4. Bad Weather

METHODOLOGY AND SAMPLING TECHNIQUES

The methodology and sampling techniques used to measure the severity indices of the major causes of failures.

Questionnaire Design

There are two stages were used for the investigation. The first stage is for the collection of the data by reviewing the related literature and gathering it through site visits, interviews, and discussions with different grade of contractors. The second stage focused on the data analysis and identification for all the relevant factors influencing causes of contractor's failures.

There are three parts in the questionnaire. The first part is an introduction to explain the idea and the purpose of the survey. The second part conforms to general information questions including the contractor's specialty in construction, the nationality of the company, experience, annual volume, and number of workers and the highest grade of the company. The respondent is requested to choose the most appropriate answer.

The third part concerns the causes of contractor failure in building and highways construction projects. The causes of contractor's failures are divided into four groups, namely managerial causes, financial causes, expansion causes, and environmental causes. The purpose of the dividing is to give respondents a full picture for each type of cause. This would give respondents opportunity to add more causes.

Statistical Sampling

A. Sample size

The contractors who had qualified and registered in the Ministry of Housing and Public Works year 1413 H had the chance to participate. The Ministry of Public Works classified contractors to fields and activities. For example, the building field has certain activities, namely public building housing, commercial building etc. in this study, two field have been included building and roads.

Also, the Ministry of Public Workers classified each field to five grades. The largest project volume was done by the contractor has determined the grade as shown in table (1). For the foreign contractor, there are six grades as shown in Table (2). The contractors from grade four and above have been included in this research. This includes Saudi and Foreign contractors, and also for building and road contractors. There are many contractors who are classified in two fields. The highest grade from any field will be his grade.

TABLE (1) Financial Limits for Classification Grade - Saudi Contractors

GRADE ACTIVITIES	FIRST	SECOND	THIRD	FOURTH	FIFTH
BUILDINGS	OVER 200	200	50	15	5
ROADS	OVER 300	300	100	30	10
WATER & SWAGE	OVER 300	300	100	30	10
ELECTRICAL WORKS	OVER 200	200	50	15	5

TABLE (2) Financial Limits for Classification Grades – Foreign Contractors

GRADE ACTIVITIES	FIRST	SECOND	THIRD	FOURTH	FIFTH	SIXTH
BUILDINGS	1200	800	500	200	50	20
ROADS	1200	800	500	200	50	20
WATER & SWAGE	1200	800	500	200	50	20
ELECTRICAL WORKS	1200	800	500	200	50	20

In this study, the population of the contracting firm has been divided into three strata:

1. Group one (Grade one and two)
2. Group two (Grade three)
3. Group three (Grade four)

Grade one and two are added together because the amount of volume of grade one is just greater than grade two.

B. Scoring

The options given for each question are on a four-point scale. Each factor has a severity index and the severity index is controlled by equation:

Severity Index (I_s) = $\sum_{i=1}^{4} a_i x_i$

Where
i = 1,2,3,4

The equation contains the constant a_i. This constant attempt to determine quantitative measures as an indicator of comparable responses. This simply means that the respondent keeps in mind a four-point scale while answering.

The scale value assigned to each response is as follows:

A. a1 = 0/3 for 'Not influence'
B. a2 = 1/3 for 'Slightly influence'
C. a3 = 2/3 for 'Influence'
D. a4 = 3/3 for 'Very influence'

x_i = the variable expressing the frequency of the i-th response, for i = 1,2,3,4, and illustrated as follows:

x_1 = the frequency of 'very influence' response
x_2 = the frequency of 'influence' response
x_3 = the frequency of 'slightly influence' response
x_4 = the frequency of 'not influence' response

Accordingly, if all parties answer the first case to be 'very influence', then the severity index = 10, which means that this factor is the most important factor and the first in the rank. On the other hand, if all answers are 'not influence', then the severity index is = zero, which means that this factor in not relevant and the last in the rank. Consequently, this will give s scale from 0 % to 100%.

STATISTICAL METHODS

1) **Tabulation and cross tabulation**
2) **Statistical techniques**
3) **Correlation**
4) **Ranking**

STATISTICAL RESULT

1. *Coefficient of Variation*

   Generally, data are considered to be homogeneous when the coefficient of variation (C.V.) is less than 10 %; however, the variation in the responses in this set is somewhat large. Thus, predictive values should be considered with care. Consequently, the results are applied only to the building and highway construction division.

2. *Cross-Tabulation*

There are four cross-tabulations, namely specialty, experience, annual volume, and number of labors. These four tables are crossed with the grade of contractors. The fields of contractors show that general construction, which is highest, is 41 % of the total samples. The second highest is highways, which is 25 %. In the samples, there are contractors with one activity and multi-activities but none of these contractors' works on residential houses alone. The residential houses come with other activities. The percentages of contactors who have one activity are 34 % for general building, 16 % for highways and 3 % for heavy construction.

The percentage of contractors who have more than one activity is 45 % of the total samples. Consequently, the study of failures of one activity of field will not give accurate results because most of the contractors have more than one activity and it will not be easy to separate the causes which influence each activity.

When the experience crossed by the grade of the contractors, 91 % of the contractors have than 10 years experience and 9 % of the contractors have experience between 3 to 10 years. The cross tabulation shows that 100 of group one contractors have more than 10 years experience. About 92.59 % of group two have 10 years or more, and 7.41 % have 5 to 10 years. 81.82 % of the group three contractors have 10 years of experience or more, 13.64 % have 5 to 10 years experience and 4.54 % have 3 to 5 years of experience. The long experience will give the results more reliability. This figure shows that both group one contractors and group two contractors have more experience than group three. Consequently, their responses to the problems reflect the existing situations.

The cross tabulation of annual construction volume shows that the highest frequency is 10-50 million. The second highest frequency is 50-100 million. The least frequency, which is for group one, is 500 million or more. There is greater percentage of contractor in group one than group two, and in group two than group three in the first three highest choices in the

volumes. This is because when the grade become higher, the volume of the project s higher. Consequently, the annul volume of contractor become higher.

The cross tabulation of the number of workers shows 10.29 % of the total of the group one contractors have more than 1000 workers, 13.23 % have 500-1000 workers, and 4.41 % have 250 workers or fewer. Consequently, the larger annual volume, the more the number of workers. About 5.88 % of group two contractors have 1000 workers or more, 7.35 % have 500 to 1000 workers, 13.23 % have 250 to 500 workers, 10.29 % have 100 to 250 workers, and 2.94 % have 100 workers or fewer. About 4.41 % of group three contractors have 500 to 1000 workers, 10.29 % have 250 to 500 workers, 7.35 % holds true for both 100 to 2500 and 50 to 100 workers, and 2.94 % have 50 workers or fewer.

3. *Correlation*

The spearmen correlation table shows that the highest agreement is between the group two and the group three contractors (r_{23}=0.95). Because they have more competitors than the group one; thus the agreement between them is higher. The gap in the volume of one project between group one contractors and group two is much greater than the gap between group two and group three. This means that the agreement between group two and group three is higher. The agreement between group one and group two is (r_{12} = 0.91), while the agreement between group one and group three is (r_{13} = 0.89).

The partial correlation shows that when group one are kept constant, the agreement between group two and group three is the highest ($r_{23.1}$ = 0.74). On the other hand, when group three is kept constant, the agreement between group one, and group two are ($r_{12.3}$ = 0.45). This indicates that group three responses are more important than those of group one in reflecting the existing situations. The agreement between group one, and group three, when keeping group two constant, is the least (r = 0.197).

This leads to the conclusion that group two responses are the most important in reflecting the existing situations. Theses results are emphasized by the multiple correlation where the highest is when group two is considered with the two other parties ($r_{2.12}$ = 0.96). When the group three is considered with other parties, the result is ($r_{3.12}$ = 0.95). The least important is when considering the group one with other parties ($r_{1.23}$ = 0.91).

4. *Test of hypothesis*

The researcher wants to test the hypothesis in group one, group two, and group three contractors to see if they generally agree on the severity of rank of failures. The test is suitable in this study.

Test of the correlation

This section tests the agreement between the parties and the differences in their responses.
The null hypothesis in section (1) below is tested by comparing the calculated value of t with the critical test value and the results is given is section (4) below.

1. On the severity rank of failures and they differ in their responses with a correlation of zero among them.
2. The calculated value of t

$$t = [(n-2)*r^2/(1-r^2)]^{1/2}$$

Where
r = the Spearmen correlation, partial correlation and multiple correlation.

n = the number of observations (the number of questions in this study). It is taken as ∞ to include any number of questions.

3. The critical test value

   $t_{0.05, \infty} = 1.645$

4. Decision

   In this case, the calculated values (see table 3) are greater than the critical value (1.645). Therefore, **the null hypothesis is rejected and it is concluded that the parties agree on the severity rank of failures and these parties are reliable in their responses.**

Table (3) T-Values for Testing H_0

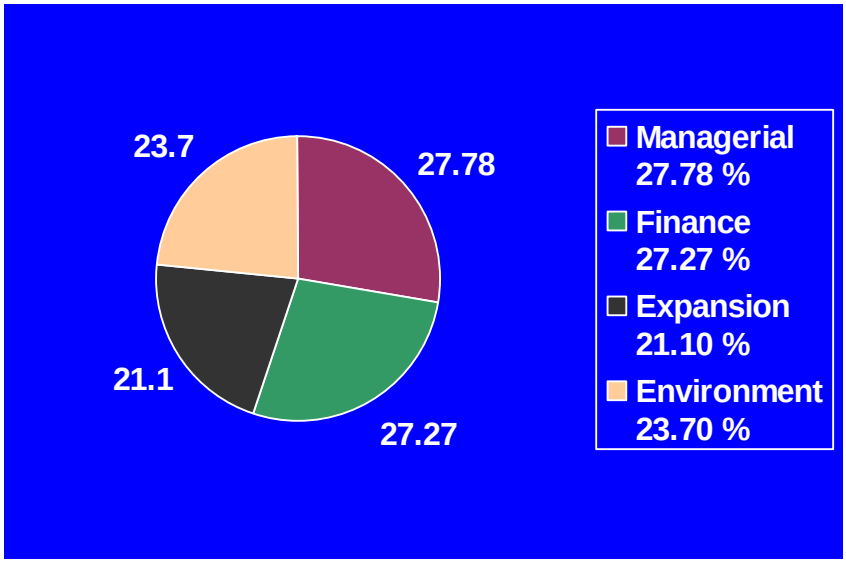
$t_{12} = 12.42$	$t_{12.3} = 8.94$	$t_{1.23} = 12.42$
$t_{13} = 11.04$	$t_{13.2} = 2.56$	$t_{2.13} = 19.39$
$t_{23} = 17.21$	$t_{23.1} = 6.24$	$t_{3.12} = 17.21$

MAJOR FINDINGS

The major causes of contractor failures are divided into four major areas. The average of each area was calculated, and then the percentage of each area was calculated. The percentage of each area is 27.78 % for managerial, 27.27 % for finance, 23.70 % for environmental and 21.10 % for expansion causes of failure. These percentages are shown in Figure 1.

The percentage of the managerial and finance causes is almost equal and the highest, but the expansion causes make the least contribution to the failures. The most important causes are discussed.

Figure (1). The Percentage of Each Type of Causes



From the ranking tables (See Appendix I), Some Major Finding are summarized:

1. **Lack of Experience in the Line of Work**

   Lack of experience is the most important causes of failure. Experience is not only important for management but also in every other part of the company from the owner to the laborers. The highest severity index in all tables is for group one. This is because the volume of projects for this group is more than 200 million, which requires very high experience in executing projects. On the other hand, the volume of the project for group three is 15 million which requires little experience to execute projects.

   This is the reason for getting the experience in the third highest in the group three contractors.

2. **Neglect**

   The severity index of neglect is the second highest for all contractors. The severity index is the first in the group three, the second in the group two, and the fifth in the group one contractors. It is clear that when the severity index of neglect goes to the upper grade, the volume decreases. Neglect

in the upper grade is more costly than in the lower grade. Therefore, the degree of awareness of neglect in the upper grade is higher.

3. **Poor Estimating Practices**

   Survey result show the project cost estimation is a very important cause of failure. Poor estimating practices are given the third rank among all contractors. The owner of the company should contribute in preparing the bidding prices. The contractor should have records for all his competitors.

4. **Bad Decisions in Regulating Company Policy**

   Bad decisions are given in the fourth rank. The rank of this cause goes higher when the grade of contractors increases. To illustrate, the rank for this cause in-group three is sixth, in-group two is fourth, and in-group one is second. This is because most of group one contractors have a policy, which is decided by the board of the company. This policy will be viewed regularly to be adapted with the economy situation. Group one contractors feel how important the company's policy is compared to other parties.

5. **National Slump in the Economy**

   The country's economy is very important to help contractors to run their businesses. A national slump in the economy is given the fifth rank. The international recession, which affected Saudi Arabia's economy, had influence on contractor failures. This is because the construction industry is more sensitive to economic cycles. The economic cycle is a period of time in which boom years are followed by depression years. The economic cycle is about 15-20 years.

6. **Labor Productivity and Improvement**

   Since the productivity and improvement of laborers are given sixth rank, contractors should give this cause very high priority. Low productivity means high cost, which could cause failure. It is very important to know what is the proper way for encouraging the laborers because laborers might be encouraged by money, promotions, gift, or by better living situations.

7. Owner Absent from the Company

Survey results unfortunately show that the owner's absence from the company is an important cause of failures. It is given the seventh rank. It was stated early that the owner's experience is very important. Now the situation is very complicated since the owner is not following his business. The rank of this cause in-group three is fifth, while the rank in the group one, and group two are eleventh and tenth respectively. Even though the absence of the owner could cause failure, it is less serious in-group one because this group is more organized and systematic than other two groups.

8. Collecting and Managing Cash Flow

Delay in receiving the payable amount for the contractor is the financial problem, which most often causes failure. In public work, the procedure for getting payment is a very long routine, which requires the contractors to use his cash flow or get a loan from the bank. This will add more cost to the project.

The cash flow management is very important for the contractor. This cause is given the eighth rank among all responses. A contractor should know where he brings money from and where the money is spent or he could be run out of the business. The rank of group one is higher than the rank of group three for cash flow management. Because the volume of group one projects is much higher than group three, the progress payment will be less and more critical. So, the progress payment for group one is more serious than for group three. This proves that increasing project size will cause problems in progress payment, which could cause a contractor's failure.

9. Lack of Management Maturity

The lack of managerial maturity or development as the company grows is given the ninth rank among all contractors. The rank of managerial maturity for group one is sixteenth, for group two is seventh, and for group three is eleventh. The group one contractors are tremendous companies, which have more than 500 workers. These companies have been

developed until they have become these lager-sized companies. So, they have passed this problem and they do not feel this cause failure. They need to preserve this level. The gap between group one and group two is 150 million. The group two contractors need to grow almost three times to be able to reach the next grade. So, their feeling about this problem is more than for any other grade. The gap between group two and group three is 35 million. Therefore, the growth for getting the next grade is not as much problem as in the case of group two. This is the reason for getting rank the managerial maturity in-group three is lower than group two. Company growth is natural, but the company should mature while it is developing to avoid failure.

10. Replacement of Key Personal

The successful companies should preserve their key personnel or they might be exposed to risks. This cause is given the tenth rank. The company could reach the peak easily, but it is very difficult to stay there. This is much possible, however, when the company always trains new employees to replace any vacancies. The rank of the three group shows that this cause is more influential in-group one. This is because the key personnel in group two and group three are three to five, but in-group on e the number will be more. Therefore, the vacancies in group one are more frequent and the cause would be more influential than for the other groups.

11. Other Causes Specified and Comments

The causes are specified by the respondents are listed below:

Lack of relationship between the management and labor force, tendency to reduce to recruit low payment, recruitment procedures and options, good name in the market, project follow up, and low company capital.

The comments, which are specified by the respondents, are listed below:

a. When the project cost estimation is more than the owner's budget, the owner will give the lowest price, even though the owner knows that the price will cause the contractor to fail.

b. Comparison should be conducted among companies active in the same territory and similar fields.

c. Proper planning for the future even though there is loss at the beginning is the key for the company's success.

d. Allowing the business contractors who are not qualified managerially and technically to enter caused failure because of their low prices and consequent low quality.

CONCLUSIONS

Based on the above information, the following conclusions can be drawn:

1. Insufficient experience in the line of work is the main important cause of failure. Experience is important for all different levels of management because the construction industry is very complicated and it needs a wake management to run the business. Not only is the experience of the owner in the business very important, but also his existence in the company in important. The owner's experience could lead the company to success because he would be able to prepare an accurate bid, do a realistic plan, be fair in managing, and be logical in judging.
2. Poor estimation practices are a major source of failure. The proper use of new methods for estimating cost would help to reduce failure. The owner is required to contribute in preparing the final price of the bid to share the responsibility.
3. One of the major causes of failure is that there is no restriction on those entering the construction market; anyone could become a contractor. As a result, unqualified contractors enter the business. This could decrease the quality of work and prices will be unrealistic. Consequently, the number of failures increases.

4. The economic impact and shortage of money in past have resulted in an increased number of failures. The profit margins have become very small and very difficult to maintain.
5. Delays in payment are the main cause of failures because they result in a financial problem to the contractor. This may cause cash flow problem to the contractor. Contractors cannot pay suppliers, workers, rents, and subcontractors. Consequently, this may stop the work and cause failure.
6. The study shows that the three parties (group one, group two, and group three) generally agree in the rank of failure. The grad three contractors are considered to be the party most influencing failure while grade four in the second. As a result, these two parties have the highest agreement.
7. Labor productivity and improvement is another cause of failure. The more labor productivity there is the less than total cost of the project. There are many ways for improving productivity, but the contractor chooses the appropriate methods for his business.
8. Bad decisions in regulating company policy are a source of failure. This cause could increase failure in the companies which there is "one man role". When decisions come from committee, the decision would consider all significant factors and the results will be satisfactory from all view points.
9. Neglect in an important cause of failure. Neglect may add extra cost to the project which could cause a failure. Customers d not like to do work with contractors who are negligent in their work. This could cause the contractor to be forced out of business.
10. Lack of managerial maturity as the company grows could cause a failure. This cause is more influential in grade three and four contractors because they manage small companies and are looking to become bigger. Grade one and two managements deal with projects of 200 million and above, so the managements are developed and the managerial maturity is not a serious problem for them.

RECOMMENDATIONS

General Recommendations

1. It is recommended that a set of procedure be established to restrict the construction industry. One of the set procedures is the restriction of the owner. The owner of the company should be qualified much as a lawyer or an engineer is.
2. Contractors should improve the practices for calculating the project cost. A contractor may request the owner to provide him with take off quantities which are prepared by the design office. The quantities would be more accurate because the designer knows more about the project.
3. It is recommended that the number of payments increase to reduce the amount of each. Also, the contractor should include extra changes for late payments.
4. In each company, there should be two committees. The first one would be for determining company policy and making the major decisions which are related to the company's organization. The second committee would be for managing the cash flow in the company.
5. It is recommended that each contractor establish a program for motivating workers. This program should be designed to cover as many workers as possible. The performance measures are an important factor for evaluating workers. Also, the financial compensation in the program has to be guaranteed in hourly wages or bonuses proportional to salary.
6. Contractor development should be done with a long term planning. The development plan should determine the expansion rate, managerial maturity and the income from the expansion. The plan should be reviewed every year, so that the contractor can decide whether to continue or to stop.

Recommendation for Future Research

The results of this research suggest the following areas which could be studies in future research:

1. The effect of the owner of a project on the failure in Saudi Contractors.
2. The effect of government regulations on the construction industry.
3. Construction company organization structures and their policies.
4. Government policies that can be initiated in Saudi Arabia to help contractors stay in the business.
5. The effect of the owner of a company on the failure.

Appendix I (Ranking Tables for Group one, Group two, Group three, and all contractors together)

Group one (Grade one and two contractors)

OBS	FACTOR	SEVERITY INDEX
1	Lack Of Managerial Experience In The Line Of Work	96
2	Bad Decision In Regarding Company Policy	84
3	Poor Estimation Practices	82
4	National Slump In The Economy	80
5	Neglect	79
6	Replace Key Personnel	79
7	Company Organization	77
8	Cash Flow Management	77
9	Bill And Collecting Effectively	74
10	Owner Absent From The Company	74
11	Labor Productivity And Improvement	74
12	Use Of Project Management Techniques	74
13	Low Margin Profit Due To Competition	72
14	Internal Company Problems	68
15	Procurement Practices	68
16	Lack Of Managerial Development Or Maturity As The Company Grows	68
17	Assigning Project Leader In The Site	67
18	Controlling Equipment Cost And Usage	61
19	Frauds	61
20	Change In The Type Of Work	59
21	Construction Industry Regulation In Saudi Arabia	55
22	Increased Size Projects	54
23	Owner Involvement In Construction Phase	51
24	Using Computer Applications	51
25	Claims	50
26	Expanding Into New Geographic Locations	50
27	Recruiting From One Country	44
28	Evaluate Project Profit One Fiscal Year	42
29	Increased Number Of Projects	41
30	Opening A Regional Office	38
31	Employee Benefits And Compensations	33
32	Recruiting Multinationals	30
33	Change From Private To Public	29
34	Bad Weather	23

Group two (Grade three contractors)

OBS	FACTOR	SEVERITY INDEX
1	Lack Of Managerial Experience In The Line Of Work	96
2	Neglect	92
3	Poor Estimation Practices	86
4	Bad Decision In Regulating Company Policy	86
5	National Slump In The Economy	84
6	Labor Productivity And Improvement	83
7	Lack Of Management Development Or Maturity As The Company Grows	79
8	Cash Flow Management	76
9	Bill And Collecting Effectively	75
10	Frauds	73
11	Owner Absent From The Company	73
12	Replace Key Personnel	72
13	Controlling Equipment Cost And Usage	72
14	Internal Company Problems	70
15	Assigning Project Leader In The Site	70
16	Company Organization	70
17	Low Margin Profit Due To Competition	70
18	Procurement Practices	68
19	Increased Size Of Projects	65
20	Use Of Project Management And Techniques	65
21	Change In The Type Of Work	64
22	Owner Involvement In Construction Phase	55
23	Claims	54
24	Increased Number Of Projects	54
25	Using Computer Applications	49
26	Evaluate Project Profit In One Fiscal Year	49
27	Expanding Into New Geographic Locations	48
28	Recruiting From One Country	47
29	Employee Benefits And Compensations	47
30	Construction Industry Regulations In Saudi Arabia	47
31	Bad Weather	45
32	Opening A Regional Office	36
33	Change From Private To Public Or Via Versa	29
34	Recruiting Multinationals	23

Group three (Grade four contractors)

OBS	FACTOR	SEVERITY INDEX
1	Neglect	91
2	Poor Estimation Practices	88
3	Lack Of Managerial Experience In The Line Of Work	86
4	National Slump In The Economy	82
5	Owner Absent From The Company	82
6	Bad Decisions In Regulating Company Policy	79
7	Assigning Project Leader In The Site	78
8	Labor Productivity And Improvement	76
9	Frauds	76
10	Replace Key Personnel	76
11	Lack Of Managerial Development Or Maturity As The Company Grows	76
12	Internal Company Problems	73
13	Cash Flow Management	73
14	Company Organization	73
15	Bill And Collecting Effectively	73
16	Procurement Practices	72
17	Low Margin Profit Due To Competition	71
18	Increased Size Of Projects	71
19	Controlling Equipment Cost And Usage	68
20	Use Of Project Management And Techniques	67
21	Owner Involvement In Construction Phase	67
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