Investigation of Factors Affecting Termination of Construction Contracts in Gaza Strip

Researcher:
Eng. Khalil Hamdan Abu Eed

Supervisor:
Dr. Nabil I. El Sawalhi

Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Science in Construction Management

The Islamic University of Gaza-Palestine
February, 2012
قل إن صلاتي ونسيكي وحياي ونذري لله مرب عالمين ۸

شربك له وانذاك أمرت وأنا أول المسلمين

الأخير (162-163)
Dedication

- Our parents to whom we owe too much.
- Every teacher who pays efforts to enrich our knowledge along all the studying period.
- Our martyrs' souls, who offered themselves for the liberation of Palestine.
- Every person who offers a useful science, a good deal, for the sake of the Islamic nation.
Acknowledgment

I wish to express my profound gratitude to Dr. Nabil I. El Sawalhi for his continued guidance, supervision, and comments throughout the course of this research. He has been ever-present force in helping me to mature as a student and as a researcher. His dedication to helping me succeed is deeply appreciated.

Grateful thanks to Gaza Contractor Union and all contracting companies for their participation in fulfilling the questionnaire.

Finally I would like to give my special thanks to my parents and family whose patience and love, enabled me to complete this work.
Abstract

Construction contracts are one of the high risky contracts because of its unique features such as long period, complicated processes, unexpected environment, financial intensity and dynamic organization structures.

The major objective of this research was to identify and investigate the factors affecting the construction contracts termination in the Gaza Strip. Also, to check the current situation for construction contracts termination in Gaza from contractor’s respective.

This research relied mainly on analytical, descriptive and field study methodologies. And the questionnaire was designed in the light of the literature review and tested by pilot study, and then it is applied on a sample of 73 contracting companies. The collected data is manipulated by Excel and SPSS software using many statistical tools such as, frequencies, percentile values, means and coloration coefficient tests.

The results show that most companies have an experience over than ten years exposed to contract termination, which was referred to donors. Most of their employees were satisfied about the administrative level of their companies and directors have the final decision especially to regarding financial issues.

The results of analyzing 51 causes of contracts termination showed that the main cause of termination are: closure, lack of resources, contractors bankruptcy or insolvent, increment of material prices, lack of experience in the line of work, wrong cost estimation, lack of capital, working at hot (dangerous) areas, low margin of profit due to competition and difference of local currency exchange with contract currency. 40% of the most important factors affecting the construction contracts termination are related to financial issues while 30% of the most important factors are related to political issues.

This study recommended that the contracting companies should estimate cost of project with proper way and should not increase the number of projects over the capacity of the company. Documentation works should be applied widely in the industry, Contractors are recommended to qualify technical staff with appropriate experience of the project. The government must take the risk when the donors delay the debts of the contractors and try to save a new resource or internal fund. The PCU should conduct continuous training programs to contractors in this field (Construction contracts termination).
ملخص البحث

تعتبر العقود الإنشائية من العقود الخطرة بسبب تميزها بأنها فريدة من حيث الفترة الطويلة وعمليات الإنشاء المعقدة والأمور المالية الكثيرة والبيئة المحيطة وكثرة الموظفين فيه.

الهدف الرئيسي من هذا البحث هو تحديد درجة تأثير هذه العوامل على إنهاء العقود الإنشائية في قطاع غزة، وأيضا تحديد العوامل الحرة منها ودراسة الوضع الحالي لإنهاء العقود في القطاع من وجهة نظر المقاول.

وقد اعتمدت هذه الدراسة على المنهج الوصفي التحليلي وأسلوب الدراسة الميدانية، حيث تم تصميم استبيان كأداة للدراسة وذلك في ضوء أدبيات البحث وتصاميم الأكاديميين والخبراء في مجال الإنشاءات.

وقد تم عمل عينة استطلاع للاستبيان تم تطبيقه على 73 شركة مقالات في قطاع غزة، وقد استخدم البرنامج الإحصائي SPSS Excel Sheets في معالجة البيانات وذلك بتطبيق العديد من الاختبارات والإحصائية كحساب النسب والتكفر والمتوسطات ومعامل الارتباط.

وقد أوضحت النتائج أن معظم الشركات لها خبرة كبيرة في مجال الإنشاءات وقد تعرضت خلال هذه الفترة إلى إنهاء عقود إنشائية لها وأن السبب في ذلك يرجع للممولين.

و ومعظم موظفيهم راضون عن المستوى الإداري للشركة و أن صاحب القرار النهائي في الشركة يرجع إلى صاحبها وخصوصا في الأمور المالية.

و أوضحت الدراسة بعد تحليل 51 عامل من العوامل المسببة لوقف العقود الإنشائية أن أهم العوامل هي الإغلاق، نقص الموارد، إفلاس المقاول، زيادة أسعار المواد، نقص الخبرة في مجال العمل، خصائص في تقدير التكلفة، رأس المال غير كاف، العمل في المناطق الخطرة، تدني مستوى الربح وتعديل سعر صرف العملة المحلية بالنسبة للعملات المستخدمة في العقود، وتبين أن 40% من العوامل ذات الأهمية العالية ناتجة عن الأمور المالية بينما 30% منها ناتج عن الأوضاع السياسية.

وقد أوصت هذه الدراسة شركات المقاولات بتقدير تكلفة العقود بطريقة صحيحة وعدم زيادة المشاريع لديها باستخدام نظام التوثيق لديها بشكل أوضح وعلى أصحاب الشركات تعيين موظفين مؤهلين وذو خبرة مناسبة.

و كما أوصت الدراسة الحكومة أن تحمل المخاطر الناتجة من تأخر الممولين في دفع مستحقات المقاولين والحظر توفير مصدر جديد أو مصدر داخلي للتمويل، وأوصت أيضا اتخاذ المقاولين أن يعطي دورات تدريب المقايئين على الأمور المتعلقة بالعقود الإنشائية وبيان لهم القوانين والأنظمة المتعلقة بذلك.
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<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.o.Q</td>
<td>Bill of Quantity</td>
</tr>
<tr>
<td>CCI</td>
<td>Construction Cost Index</td>
</tr>
<tr>
<td>CSFs</td>
<td>Critical Success Factors</td>
</tr>
<tr>
<td>D&amp;B</td>
<td>Design and Build</td>
</tr>
<tr>
<td>DRTs</td>
<td>Dispute Resolution Techniques</td>
</tr>
<tr>
<td>EPM</td>
<td>Engineering Project Management</td>
</tr>
<tr>
<td>GMP</td>
<td>Guaranteed Maximum Price</td>
</tr>
<tr>
<td>GNP</td>
<td>Gross National Production</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>IIR</td>
<td>The Importance Index Rate</td>
</tr>
<tr>
<td>IT</td>
<td>Information Technology</td>
</tr>
<tr>
<td>PCR</td>
<td>Project Closeout and Review</td>
</tr>
<tr>
<td>PCU</td>
<td>Palestinian Contractors Union</td>
</tr>
<tr>
<td>SRO</td>
<td>Senior Responsible Owner</td>
</tr>
<tr>
<td>SPSS</td>
<td>Statistical Package for Social Science</td>
</tr>
<tr>
<td>UAE</td>
<td>United Arab Emirate</td>
</tr>
</tbody>
</table>
Chapter 1

Introduction
This research identifies and investigates factors that influence the construction contracts termination in the Gaza Strip. Understanding this mechanism may prevent their failure in the future contracts.

In this chapter, an introduction to the construction industry and the Palestinian economy is highlighted. Also, the research problem, the research purpose, objectives, and boundaries are to be explained.

1.1 Construction industry and Palestinian economy
Construction industry is one of the largest and most important industries in Palestine. It holds a big share of the Gross National Production (GNP) and shares a large part of the Palestinian market especially in the past few years. Although construction industry in countries directs a very small amount of its revenues towards scientific research (Barrie and Paulson, as cited in Abu Alqumboz, 2007).

Construction industry is a vital contributor to the Palestinian economy. It includes the overall building community and consists of: owners, operators, and users; developers, designers, contractors, fabricators, manufacturers and suppliers; regulators, codes and standards organizations, building and fire safety officials, labor, financial organizations, testing laboratories, educational institutions, and research organizations (Raufaste and Callahan, as cited in Shoman, 2009).

The construction sector is a vital contributor to the Palestinian economy, it is a major supporter of employment in Gaza Strip and contributes 10.8% to employment directly and 30% indirectly by supporting related industries that work in production services to support the construction industry. Following the breakout of the second Intifada in 2000, the construction and other majors industries were affected negatively as a result of borders closures, this prevents the supply of critical material in all different industrial, commercial sectors, cities and towns. Closures have badly affected the construction industry and that has contributed to increasing the already high rate of unemployment in Palestine (Palestine Central Bureau of Statistics – PCBS, 2004).
Table 1.1 Percent change of value added for economic activities during 2010 compared with 2009 – Value added in $ million

<table>
<thead>
<tr>
<th>Economic Activity</th>
<th>Palestinian Territory</th>
<th>% change</th>
<th>West Bank</th>
<th>Gaza Strip</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Value added</td>
<td>Value added</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agriculture and Fishing</td>
<td>293.2</td>
<td>360.0</td>
<td>22.8</td>
<td>17.2</td>
</tr>
<tr>
<td>Mining, manufacturing, electr. and water</td>
<td>747.7</td>
<td>706.6</td>
<td>-5.5</td>
<td>-5.7</td>
</tr>
<tr>
<td>Construction</td>
<td>387.7</td>
<td>525.6</td>
<td>35.6</td>
<td>13.9</td>
</tr>
<tr>
<td>Wholesale and retail trade</td>
<td>566.5</td>
<td>634.7</td>
<td>12.0</td>
<td>11.9</td>
</tr>
<tr>
<td>Transport, Storage and Communications</td>
<td>421.0</td>
<td>446.5</td>
<td>6.0</td>
<td>5.7</td>
</tr>
<tr>
<td>Financial intermediation</td>
<td>269.1</td>
<td>297.2</td>
<td>10.4</td>
<td>11.9</td>
</tr>
<tr>
<td>Services</td>
<td>1157.5</td>
<td>1196.0</td>
<td>3.3</td>
<td>2.9</td>
</tr>
<tr>
<td>Public administration and defense</td>
<td>750.6</td>
<td>798.8</td>
<td>6.4</td>
<td>8.5</td>
</tr>
<tr>
<td>GDP</td>
<td>5241.3</td>
<td>5728.0</td>
<td>9.3</td>
<td>7.6</td>
</tr>
</tbody>
</table>

Source: (PCBS, 2011)

The GDP in the Gaza Strip had increased by 15.1%. Among economic activities, Construction recorded the highest increase by 23.2% during 2010. In addition, the Transport, Storage and Communications Activity had recorded increase in the value added. The Agriculture Activity in the Gaza Strip had witnessed improvement by 34.6% compared to 2009 while Mining and manufacturing reflected fallback (Palestinian central bureau of statistics, 2011).

![Figure 1.1: Contribution of Economic Activities in Gross Domestic Product, (Gaza Strip, 2010)- (Source: PCBS, 2011)](image-url)
The value added of the Construction Activity had increased by 35.6% in 2010 compared to 2009. In addition, administrative records also showed a rise by 17.5% in the number of building licenses issued in the West Bank for the year 2010. The prices of construction materials rose by 1.6% compared to 2009 despite quantities of imported cement reached 1.3 million ton in 2010 compared to 1.2 million ton in 2009. The year 2010 also witnessed a rise by 26.2% in the number of workers in construction activity to reach 57 thousand workers in 2010. The average daily wage of a worker in the Construction Activity is considered the highest among economic activities to reach NIS 117.4; while productivity rate reached USD$ 15,600.7 per worker (Palestinian central bureau of statistics, 2011).

The Construction Cost Index had increased by 1.6% in 2010 compared to 2009.

Table 1.2 Construction Cost Index (CCI) by major groups in the West Bank, 2008-2010.

<table>
<thead>
<tr>
<th>Major Groups</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw materials</td>
<td>114.13</td>
<td>104.30</td>
<td>105.85</td>
</tr>
<tr>
<td>Hiring of equipment</td>
<td>119.61</td>
<td>131.11</td>
<td>137.28</td>
</tr>
<tr>
<td>Labor cost and wages</td>
<td>105.30</td>
<td>116.69</td>
<td>118.89</td>
</tr>
<tr>
<td><strong>All- Items construction cost index</strong></td>
<td><strong>111.63</strong></td>
<td><strong>107.67</strong></td>
<td><strong>109.36</strong></td>
</tr>
</tbody>
</table>

Source: (PCBS, 2011)

1.2 The nature of the construction industry and risk

The construction business, like any other business, is risky (El-Sayegh, 2008). Risk is manageable, diminishable, transferable or acceptable but not ignorable (Lam et al., 2007).

Risk! Construction projects have an abundance of it, contractors cope with it and owners pay for it. The construction project industry is subjected to more risk and uncertainty than many other industries. So it is required a multitude of people with different skills and interests and coordination of wide range of disparate, yet interrelated, activities (Flanagan & Norman, 1993).

Construction projects are one-off endeavors with many unique features such as long period, complicated processes, abominable environment, financial intensity and dynamic organization structures and such organizational and technological complexity generates enormous risks (Zou et al., 2007).
The construction contracting business has the second highest failure rate of any business. (Clough and Sears as cited Enshassi et al., 2006). A contractor is at far more risk than his counterpart in almost any other industry (Kangari, 1988).

Construction is difficult to comprehend fully because the relationships between the parts are not always clear and the boundaries of the industry may be characterized as:

- It is fragmented,
- It is sensitive to economic cycles,
- There are extraordinary diversity of professions, specialists and suppliers,
- It is largely affected by external environments (Abu Mousa, 2005).

1.3 Construction project termination in Gaza Strip

Contract termination is a natural phenomenon in the construction industry. Termination refers to contract work that will be ended or concluded with no intention of resuming in the foreseeable future. It requires written procedures to protect the interests of the client and the contractor. To be fair, procedures must make provision for the contractor to recover actual direct costs for work completed, material purchased but not installed, additional work required by the termination directives, and overhead and profit for such expenses (Iyer et al., 2008).

Project termination as consists of two broad types: first, a natural termination when the project goals have been met, and second, an unnatural termination when some project constraints have been violated, performance is inadequate, or the project goals are no longer relevant to some overall needs (Spirer as cited in El Karriri, 2011).

In the Gaza Strip, there is evidence that the number of contractor's failure is increasing rapidly. The result of projects failure is expected to either terminate or suspend the projects which lead to large losses, dispute and claims. Most of construction projects in the Gaza Strip are exposed to the contract termination since the Israeli siege on June 2007 which caused loss of project's profit, increasing cost and leading to managerial and technical problems between project's parties (El Karriri et al., 2011).

More than many other industries, construction industry is subject to more conflicts, disputes and claims. Construction industry in Gaza Strip suffers from the misunderstanding of dispute or claim resolution management, many factors affect the development of dispute resolution. Over the last years, there has been a break down in the relations between parties involved in the construction process. This has appeared
due to many reasons affecting the developing and the expansion of the construction sector. One of them is construction contracts termination. Thus, this research is important in order to determine the construction contracts termination factors affected in the construction industry in Gaza Strip.

1.4 The contractor's organization

The Palestinian Contractors' Union (PCU) was established in 1994. It performs a number of valuable services for its members such as classification procedures, follow up and solving problems, improve industry cultures and habits, support inter-social relationships between members …etc. (PCU, 2011).

The total number of the registered contractors in Gaza Strip is about 212 contractors. Each contractor has more than one type of work categories obtaining them after passing the classification requirements. Table 1.3 shows the distribution of the contractors according to their classification of classes of work fields.

Table 1.3 Number of classification of classes construction companies (PCU, 2011)

<table>
<thead>
<tr>
<th>Classification Class</th>
<th>Building</th>
<th>No</th>
<th>Classification Class</th>
<th>Roads</th>
<th>No</th>
<th>Classification Class</th>
<th>Water and Sewage</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>First A</td>
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<td>25</td>
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<td>4</td>
<td>First A</td>
<td></td>
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<tr>
<td><strong>Total=</strong></td>
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<td>252</td>
<td><strong>Total=</strong></td>
<td></td>
<td>171</td>
<td><strong>Total=</strong></td>
<td></td>
<td>149</td>
</tr>
</tbody>
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1.5 Research problem

The construction contracts are consider naturally dangerous. So, If it is not been dealt with properly, It could lead to failure. This has mainly been happening in recent years, especially in last five years where a lot of construction contracts were terminated because of political or financial situation. There fore, It is very important to recognize the factors which lead to termination, and to study the current situation in Gaza Strip to avoid or mitigate termination.
1.6 Research purpose
This study will provide contractors by practical suggestions to deal with the construction contract termination and improve the performance of contracting companies in this field. The value of this research is seen through increased project success, better relationship between the construction team, the contractors and owner agency, fewer claims, and reduced overall project costs.

1.7 Research aims
The aim of this research is to mitigate the termination of construction contracts in Gaza Strip.

1.8 Research objective
1. Identify key factors that may impact construction contracts termination.
2. Investigate the factors affecting the contracts termination according to the contractors perspectives.
3. Identify the most important factors affecting termination.
4. Check the current situation in Gaza Strip for contracts termination.

1.9 Research limitation
This research included the following limitations:
1. The study included the identification and investigation of key factors that may impact construction contracts termination in Gaza Strip.
2. Only contractors firms who are registered in the Palestinian Contractors Union-Gaza Governorates, represent our population (The first three classes of contractors classification).
3. The duration of research is from April 2011 to November 2011.
4. The data, to be collected, covers the last ten years.

1.10 Research methodology
The goals of the research are achieved through the following stages:
First stage: Literature review
Literature and previous research studies were reviewed to collect data about the construction contracts termination and its components in details, the factors affecting
Second stage: Field survey
Several meetings and discussions were held with experts in the construction field. Hence, a structured questionnaire was designed and then distributed by direct contact to contractors in Gaza Strip. Target group is the first three classes of contractors classification. Statistical analysis for questionnaires is analyzed using Statistical Package for the Social Sciences (SPSS) and Excel Sheets. In order to verify the validity and reliability of the study hypotheses, variables associations were tested. The important factors were identified. Investigate the current situation in Gaza Strip.

Third stage: Results and conclusion
The outputs of this research are a questionnaire analysis and discussion. Finally, the conclusion and recommendation of the study were drawn up.

1.11 Outline contents of the thesis
The thesis consists of five chapters as follows:

Chapter 1: Introduction
This chapter has a general introduction to the subject of the thesis. It describes the rational of the research, research objectives, and the outline of the research methodology. The research scope and limitations, and the outline contents are also stated in Chapter 1.

Chapter 2: Construction project termination
All the available information classified under relevant literature is discussed in this chapter. The main topics stated in this chapter are: construction industry, construction project termination, and construction risk, ..... etc.

Chapter 3: Methodology
This chapter defines the process of the methodology that will be applied through the questionnaire.

Chapter 4: Results and Discussion
This chapter presents the results of the research and discusses it in details.

Chapter 5: Conclusion and Recommendations
This chapter states the conclusions and recommendations.

References and Annexes.
Chapter 2

Construction Contracts Termination

The definition, causes and symptoms, types of termination are to be explained in this chapter. Also cure and prevention of contracts termination are to be illustrated.

2.1 Background for contacts

2.1.1 Definitions

A contract is legally enforceable agreement. An agreement is usually defined in terms of an "offer" by one party and an "acceptance " of that offer by the other (Samuels, 1996).

Kawakye, (2008) define a contract as a legally binding agreement between two or more persons. Legally binding means that the agreement will be enforced by the courts.

BPI, (2007) define the construction contract as a contract which places responsibility on the construction contractor to perform as per the design developed by design staff and/or by an independent architectural, engineering firm under a separate contract. Construction contract is a contract specifically negotiated for the construction of an asset or a combination of assets that are closely interrelated or interdependent in terms of their design, technology and function or their ultimate purpose or use (Haider, 2009).

Gilbreath, (1986) as cited in (Dilts et al., 2006) defined a project as a series of tasks or activities needed to achieve a specific objective within certain technical specifications, within defined start and end dates, and subject to funding limits and resource availability.

Iyer et al., (2008) define the termination of contracts as ending the contract work with no intention of resuming it in the foreseeable future.

Balachandra and Friar (1997) define the termination as the discontinuation of a project before it achieves its complete implementation.

The termination of a contract results in its end and neither party is required to continue performance under it. However, once the contract is terminated, the parties may still be
entitled to damages based on the termination. The nature and amount of these damages depends, again, on the way termination is treated in the construction contract (Wittbrodt et al., 2009).

2.1.2 Essential elements of a valid contract
There are a number of essential elements required for a valid contract to be formed

a. Agreement
Agreement between the parties regarding the purpose, rights, obligations, and remedial measures which the contract will create is essential. A written agreement is not a necessary requirement, but in practice it is desirable to put the agreement in writing since it will provide substantial evidence for the terms of the contract.

b. Offer and acceptance
An offer is a proposal by one party of its willingness to be legally bounded by the proposal as soon it is accepted by another party (Kawakye, 2008).

An acceptance is full acceptance by party to whom an offer has been made (Kawakye, 2008).

In forming a contract, there must be an offer consisting of a definite promise from one party to the other of his willingness to be legally bounded on specific terms and an unconditional acceptance of those terms by the second party. An offer may be withdrawn before it has been accepted and will be valid for a “reasonable” time if no time limit is imposed (Seid, 2008).

c. Considerations
Consideration is what each party contributes to the contract, or in other words, it is what the parties put into and get out of the contract. Consideration must have some economic value, but the law is not concerned with the value being inadequate (Seid, 2008).

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d. The intention to be legally bounded
Although a legal contract necessitates agreement between the parties as to the rights and obligations it will create, a mere agreement by itself will not be enforceable at law unless the parties there to fully intend to be legally bounded by its terms and conditions. Hence, the parties are required to form a contract enforceable at law if it is intended that the contract is to be legally binding (Seid, 2008).
e. Genuine consent of parties
It is essential that the agreements must be free from misrepresentation, mistake, duress, and undue influence and made with proper and genuine consent by the parties to it (Kawakye, 2008).

f. Legal capacity
Certain parties are either not allowed to enter into a contract or are restricted in some way which includes minors, drunks, lunatics, and convicts under sentence. Corporate bodies, such as limited companies and public authorities, can only make contracts within powers contained in their memorandums of associations and persons signing contracts on behalf of their organization should not do so unless they are specifically authorized to commit the organization (Seid, 2008).

2.1.3 Contract documents:
They are words expressed orally or recorded in handwriting, typing or printing by the parties.
In most construction contracts contract documents usually take the following forms.
1. Contracting requirements: These include contracting forms (agreement) and conditions of the contract (general and supplementary conditions, or owner furnished general or special conditions) as well as various named attachments and forms. Revisions, clarifications, and modifications are changes applicable to the contract documents such as addenda issued during the procurement process or change orders issued during the course of the work (CSI, 2011).

2. Specifications: These include specific written requirements for the work. Specifications define the quality requirements for products, materials, and workmanship upon which the contract is based and establish requirements for administration and performance of the project. They are generally written for each work result as sections and organized by divisions using Master Format (CSI, 2011).

3. Contract drawings: These include large graphic illustrations of the physical form of the work to be performed. The drawings are graphic representations of the work upon which the contract is based. As the graphic documents usually contain more than plan views, the preferred term is drawings rather than plans. They show the quantitative extent and relationships of elements to one another (CSI, 2011).
2.1.4 Construction project stakeholders

Stakeholders are individuals, groups or organizations, institutions and others that are actively involved in a project and whose interests may be positively or negatively affected by the project execution (Seid, 2008).

Project stakeholders can be classified into two major groups: primary and secondary stakeholders as shown in Figure 2.1. Primary stakeholders are those persons or groups of the project team who have a contractual or legal obligation to the project team and have responsibility and authority to manage and commit resources according to schedule, cost, and technical performance objectives. These stakeholders can also be named as contractual stakeholders. Secondary stakeholders are those who have no formal contractual relationship to the project but can have strong interest in what is going on regarding the project. These stakeholders can be participants on budgetary and financial agreements, business and professional interests or relationships and they are also referred to as budgetary and collateral stakeholders (Seid, 2008).

Figure 2.1: Major stakeholders
2.1.5 Type of contracts
As we define the contract before the contract is a legally enforceable agreement between two or more parties with mutual obligations. And there are more types of it:

A fixed price contracts
A fixed price contract means that the contractor is to receive a lump sum amount, which compensates the contractor for the cost performing the work, including labor, materials and equipments as well as overhead and profit. Such contractors are also referred to as stipulated price or lump sum contracts. Under these contracts, the owner usually has no right to direct the contractor in the means and methods of construction and has no right to inquire about the actual cost of performing the work. The contractor will be entitled to keep any additional profit earned as a result of cost saving measures but will also be responsible for overruns, subject, of course, to completing with terms of the contract and provided no changes have been necessitated by the owner (Samuels, 1996).

Cost-plus contracts
A cost plus agreement usually requires that the contractors compensated by the owner for the actual costs of construction, plus a fee that may be fixed or may vary with the "cost of construction". In such agreement, it is imperative that the costs of construction be accurately defined. This has been the source of many dispute, particularly regarding overhead item. In cost plus contracts should generally allow meaningful involvement by the owner in the details of construction, including means and methods (Samuels, 1996).

Unit price contracts
Unit price contract require that the owner pay a stipulated amount for each unit or quantity of work performed. These contracts are common on road, building, earthmoving and pipeline projects. Although unit price contracts do not guarantee the final cost, they may be advantageous for different reasons where the quantity of work may vary, requiring a contractor to bid on a lump sum basis often results in contingency within the price to protect against the risk of a quantity different from that estimated. Thus under a fixed price contracts, the owner ends up paying a premium (Samuels, 1996).
2.1.6 Factors influencing the choice of the type of contract

- The appropriateness for providing an adequate incentive for efficient performance by the contractor;
- The ability to introduce changes;
- The allocation of risks;
- The start and completion date of the project.

2.1.7 Preparing for contract management and providing oversight

Construction is a complex multi-stage process, and the stages must be appropriately aligned and managed. The client that commissioned construction works must make various multi-purpose decisions at various stages of construction (Mitkus et al., 2007).

1. There is a planned transition from the tendering/contract award phase to the contract management phase, and a handover to contract manager; the cost of contract management is included in the business case and budgets.
2. Contract ownership is clear, with the budget holder, senior responsible owner (SRO), and contract manager clearly defined; there is continuity of governance as far as possible.
3. There are well defined processes and a clear contract management plan, with a focus on outputs and a ‘whole life’ approach to performance.
4. Overall ownership of contract management across the organization is clear, with a ‘contract management senior responsible owner’ with responsibility for driving organization-wide contract management performance.
5. Contract management processes are aligned with, among others, wider organizational governance processes, operational boards, and risk structures.
6. Contract management issues and performance are reported through the governance structure with senior level engagement.
7. Regular assessment and evaluation takes place to ensure that the cost of contract management activities is justified and proportionate to the benefits obtained.
8. Knowledge management is embedded, capturing key data and lessons from contract management process and experience both within the organization and more widely.
9. Professional contract management guidance is developed, or identified from external sources, and made available to contract managers (NAO, 2008).
2.2 Construction project overview

Projects have clearly become a central activity in most organizations and companies are investing increasing resources in projects such as new product development, process improvement, or building new services. Many studies have demonstrated, however, that most projects do not meet time and budget goals, or fail to satisfy customer and/or company expectations. Yet, project success means more than just meeting time and budget goals. It involves additional success dimensions such as business results or preparing for the future (Sauser, 2009).
2.2.1 Project success overview

Dvir (2005) defined project success as the completion of an activity within the constraints of time, cost, and performance. This was the definition used for the past twenty years or so. Today, the definition of project success has been modified to include completion (Dvir, D., 2005):

- Within the allocated time period;
- Within the budgeted cost;
- At the proper performance or specification level;
- With acceptance by the customer/user;
- With minimum or mutually agreed upon scope changes;
- Without disturbing the main work flow of the organization;
- Without changing the corporate culture.

2.2.2 Project failure overview

Kaminetzky (1991) as cited in Reddy et al. defines failures as “… a human act; omission of occurrence or performance; lack of success; nonperformance; insufficiency; loss of strength; and cessation of proper functioning or performance” A failed project is usually defined as any project with severe cost or schedule overruns, quality problems, or one that suffers outright cancellation.

Work on a project has stopped or slowed to the point that progress on the project has stopped. Not all projects stopped are said to be terminated since some projects that have slowed down considerably are also considered to have been terminated (EPM, 2011).

Basic factors in a Project’s failure include (EPM, 2011):

- Wrong project manager chosen;
- Faulty designing;
- Poor planning;
- Poor support for the project from top management;
- Costs and schedules exceeded;
- Project requirements met but business needs still unresolved.
2.2.3 Warning signs that a construction projects is in trouble
The Surety Information Office, which is an office that collects data on surety bonds in the United States, has identified six broad warning signs that a construction company is in trouble. They are as follows (Halim et al., 2010):
1. ineffective financial management system;
2. bank line of credit constantly borrowed to the limit;
3. poor estimating and/or job cost reporting;
4. poor project management;
5. absence of a comprehensive business plan;
6. communication problems.

2.2.4 Risk in construction project
Risk can be defined as any factor, event or influence that threatens the successful completion of a project in terms of time, costs or quality (Medda F., 2007).

One way of classifying the risk is by identifying where control of the risk lies. This may change during the life of the project. There are five classifications of risk according to where control lies (IMCA, 2006):
1. External: Unpredictable
These are risks beyond the control of the individual or operator and are totally unpredictable. They arise from external influences such as third parties, acts of god, etc.
2. External: Predictable but Uncertain
These risks are also beyond the control of individuals or companies. They are expected, but to what extent? There is usually data to determine a norm or average, but the actual impact can be above or below this norm. Bad weather is an example.
3. Internal: Technical
These are risks arising directly from the technology of the project work, of the design, construction or operation of the facility.
4. Internal: Non-Technical
These are within the control of individuals or the operator and usually arise from a failure of a project team to achieve its expected performance. They may result in schedule delays, cost over-runs or an interruption to cash flow.
5. Legal: Civil and Criminal
Risks under civil law can arise from contractual arrangements, patent rights etc. Risks under criminal law can arise under statute.
2.3 Termination of construction contracts

The termination of a contract results in its end and neither party is required to continue performance under it. However, once the contract is terminated, the parties may still be entitled to damages based on the termination. The nature and amount of these damages depends, again, on the way termination is treated in the construction contract (Wittbrodt et al., 2009).

It is vitally important that contractors and owners understand when and how a termination can legally occur and how to handle such termination threats (Brumback, M., 2006).

2.3.1 Types of termination

Spirer as cited in El Karriri (2011) said there are two types of project termination

1. Natural termination.
2. Unnatural termination.

Natural termination: means that the aims of the project objectives have been attained.

Unnatural termination: means that work on the project has stopped because of the project constraints have been violated or the project objective has become irrelevant to the overall goals (EPM, 2011).

Termination can be for default or for convenience. As cited in Brumback, M., 2006

a. Termination for default

Both the contractor and the owner have a right to terminate for default.

1. Contractor’s termination for default

A contractor may terminate the contract for a material breach pursuant to A201 para. 14.1.1. This provision provides that a contractor may terminate the contract if the work is stopped for 30 or more days through no fault of the contractor, for specified reasons only, which include:

- issuance of a governmental stop-work order;
- an act of government such as declaration of national emergency;
- failure of prompt payment or failure to issue a certificate of payment with no notified reason for the failure to issue such a certificate; or
- failure of the owner to show financial capability upon request.

Additionally, a contractor can terminate the contract for cause if it experiences repeated suspensions, delays or interruptions of the work in the following delay situations:
• more than 100% of the total number of days scheduled for completion, or 120 days in any 365 day period, whichever is less; or
• if work is stopped for 60 consecutive delays through the fault of the owner.

2. Owner’s termination for default
Pursuant to A20 I para 14.2.1, the owner can terminate for cause as well, if the contractor materially breaches the contract in one or the following ways:
• persistently fails to supply enough properly skilled workers or proper materials;
• fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements;
• persistently disregards laws, ordinances, or rules, regulations or orders of a public authority having jurisdiction; or
• otherwise is guilty of substantial breach of a provision of the contract documents.
Termination for cause must be for breaches which are “so material as in effect to defeat the very terms of the contract.

b. Termination for convenience
Only the owner can terminate, or suspend, the contract for convenience. The contractor is not vested with this right. With written notice, the owner can suspend the project for convenience under 14.3.1. This power is completely discretionary with the owner, However, in such a case, the contract sum and time are adjusted for increases caused by the suspension, delay, or interruption.
Furthermore, the owner can terminate the contractor at any time for convenience under 14.4.1. Upon receipt of written notice, the contractor shall cease operations as directed, take necessary actions to protect and preserve the work, and terminate all subcontracts and purchase orders.
In the case of such termination for the owner’s convenience, the contractor shall be entitled to receive payment for work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the work not executed.

2.3.2 Ways of termination
There are four fundamentally different ways to close out a project:
1- extinction,
2- addition,
3- integration,
4- and starvation (Meredith, 2000).
Termination by extinction: means the project has been successful and achieved its goals. Like the new product has been developed and handed over to the client; or the building has been completed and accepted by the purchaser. Projects terminated by extinction may have been successful or unsuccessful (Dvir, 2005).

Termination by addition: means

• If a project is a major success, it may be terminated by institutionalizing it as a formal part of the parent organization.

• When project success result in termination by addition, the transition is strikingly different from Termination by extinction. Project personnel, property and equipment are often simply transferred from the dying project to the newly born division.

• The metamorphosis is accompanied by budget and administrative practices based on standards procedures of the parent organization.

Termination by integration: means

• This method of terminating a project is the most common way of dealing with successful projects, and the most complex. The property, equipment, material, personnel, and functions of the project are distributed among the existing elements of the parent organization (Dvir, 2005).

• The outputs of the projects become a standard part of the operating systems of the parent or client.

• The following are the important aspects of project transition from project to integrated operations.
  1. Personnel;
  2. Manufacturing;
  3. Accounting/finance;
  4. Engineering;
  5. Information system/software;
  6. Marketing;
  7. Purchasing, distribution, legal etc;
  8. Risk identification and management.
Termination by starvation: means
There is a forth type of project termination, although it is not a termination at all. It is slow starvation by budget decrement.

2.3.3 When to terminate a project
(Project Planning & Control, 2011) cited the reasons when we terminate project as follow:
1- Some questions to ask when considering termination:
   • Has the project been obviated by technical advances?
   • Is the output of the project still cost-effective?
   • Is it time to integrate or add the project as a part of regular operations?
   • Are there better alternative uses for the funds, time and personnel devoted to the project?
   • Has a change in the environment altered the need for the project’s output?
2- Reasons projects fail:
   • Project organization was not required (Non-Projects and Pseudo-Projects)
   • Insufficient support from senior management;
   • Wrong person as project manager;
   • Poor (or insufficient) planning;
   • Lack of “Critical Success Factors”.

2.3.4 Typical contractual grounds to terminate

Termination clauses are a common forms feature in standard construction contracts such as the International Federation of Consulting Engineers (FIDIC). It is usual for parties to set out the events upon which one or both parties may terminate the contractual relationship between. Some of the typical reasons include (Article, 2008):

- when one party breaches certain terms of the contract (e.g. workmanship);
- when one party repeatedly fails to perform its obligations;
- when a specific event occurs, e.g. when a party becomes insolvent or has a receiver or administrator appointed over its assets;
- when one of the parties exercise its discretionary right to terminate for its own convenience;
• when a prolonged suspension or force majeure type event occurs.

Figure 2.3 shows project termination decision tree

2.3.5 Notice of termination

If the contractor fails to cure the situation or provide a satisfactory explanation as requested, the contract may be terminated. The Notice of Termination should contain the following (Texas Administrative Code):

1. The contract number, if any, and date of contract;
2. The effective date of termination;
3. Reference to the clause under which the contract is being terminated;
4. A concise, accurate statement of the facts justifying the termination;
5. A statement that the supplies or services being terminated may be re-procured and that the contractor will be held liable for any additional costs incurred due to the repurchase. Before including this statement, the contract should be reviewed to determine whether the right is available under the contract.

2.3.6 Steps to proper termination

1. Contractor’s proper termination (Brumback, 2006)

Prior to termination, the contractor can elect to suspend the work if timely payments are not made by the owner. This is a safer course of action than termination, and it allows the owner a chance to cure. If the contractor must terminate for cause, he must provide a 7 day written notice to the owner.

2. Owner’s proper termination (Brumback, 2006)

Although not required prior to termination, the owner can elect to exercise its right to stop work prior to taking the more drastic remedy of termination. The owner can stop the work if it is not proceeding in accordance with the plans, and the contractor’s breach is substantial. This is a recommended first step prior to termination. Further, the owner can elect to carry out portions of the work itself, provided it follows the notice requirements and gives the contractor an opportunity to comply. Prior to termination, the owner must give a 7 day written notice to the contractor. After termination, the owner is permitted to choose any reasonable method for completing the work and charge that cost to the defaulting contractor, whether or not that method is the best method or the cheapest method.
2.3.7 The effectiveness of termination on project

The project termination constitutes a significant part in the total project, it is often overlooked by project managers (De, 2001). This not only prevents the executing firm to claim the last portion of the contractual value of the project, but also develops another series of effects, namely (De, 2001):

- time over-run;
- cost over-run as a direct result of time over-run in most cases;
- tarnishing the image and credibility of the project team;
- locking up valuable human and other resources that could have been gainfully utilized elsewhere;
- developing enormous stress on the project personnel.

2.3.8 Available damages from termination

Whenever a party breaches a contract, the non-breaching party is entitled to recover some form of damages. In all contract actions, a breach entitles the other party to at least nominal damages, and actual damages which they can prove. In the case of termination, the actual damages must be shown to be the proximate result of the termination (Brumback, 2006).

1. Contractor’s damages (Brumback, 2006)

If a contractor terminates the contract for cause, he is entitled to recover payment for Work executed and for proven loss with respect to materials, equipment, tools, and construction equipment and machinery, including reasonable overhead, profit and damages.

Similarly, if an owner terminates the contract for the owner’s convenience, the contractor is entitled to recover payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on Work not executed.

In the case of a subcontractor which has defaulted, the general contractor is entitled to recover from that subcontractor any increased costs of completing the work from defaulting subcontractor.

2. Owner’s Damages (Brumback, 2006)

For a contractor’s breach or an owner who terminates for cause, the owner’s damages
can be either the cost of repair/completion the difference in value from what was contracted. In general, cost of repair is the proper measure of damages in a construction case where the owner would not get what he bargained for unless he gets the repair, replacement or completion. If the unpaid contract balance exceeds the costs of finishing the work, the contractor should be reimbursed the difference. If the work to finish is greater than the balance remaining, the contractor shall pay the difference to the owner. (A201, para 14.2.4).

An exception to the cost of repair method of calculating damage exists, however, where a substantial portion of the completed work would be destroyed to undertake the repair. In that case, diminution in value may be used as the measure of damages instead, provided the structure substantially conforms to the contract specifications. If, however, the defects or omissions are major, such that the building does not substantially conform, then the decreased value of the constructed building justifies the high cost of repairs.

2.3.9 Why PM's ignore termination

The most direct reason that Project Closeout phase is neglected is lack of resources, time and budget. Even though most of project-based organizations have a review process formally planned, most of the times "given the pressure of work, project team member found themselves being assigned to new projects as soon as a current project is completed" (Newell, 2004). Moreover, the senior management often considers the cost of project closeout unnecessary. (Sowards, 2005) implies this added cost as an effort "in planning, holding and documenting effective post project reviews". He draws a parallel between reviews and investments because both require a start-up expenditure but they can also pay dividends in the future.

Human nature avoids accountability for serious defects. Therefore, members of project teams and especially the project manager who has the overall responsibility, will unsurprisingly avoid such a critique of their work if they can. As (Kerzner, 2001) observe, "documenting successes is easy. Documenting mistakes is more troublesome because people do not want their names attached to mistakes for fear of retribution". Thomset (2002) compares project reviews with the ‘witch hunts’ saying that they can be "one of the most political and cynical of all organizational practices where the victims (the project manager and the team) are blames by senior management". While he identifies top management as the main responsible party for a failure, (Murray, 2001)
suggest that the project manager "must accept ultimate responsibility, regardless of the factors involved". A fair-minded stance on these different viewpoints would evoke that the purpose of the project review is not to find a scapegoat but to learn from the mistakes.

2.3.10 Prevention of construction project failure or termination
YI et al. (2006) cited the factors to prevent the project failure or termination as follow:
1. Scientific identification and prediction of failure
Failure of construction business and management involves studies of various fields. Only through multidisciplinary and multi-angle discussing, scholars can realize origins of failures. Only based on comprehensive analysis of failure factors, they can build scientific and rational prediction models, and obtain maximal prevention and treatment with minimal cost (Wang 2002). In order to predict scientifically, many economic methods should be used for reference. For instance, some fundamental methods in contemporary Western economics are to analyze functions of economic variables, build mathematical models, make decisions, and predict. Research of enterprise failure need adopt this kind of methods to use mathematics and statistics to build prediction model of failure.
Generally, backgrounds of enterprise failures are complicated, and they cannot be explained with only one factor. It can be said that various factors produce one disease, and one factor brings various diseases.
2. Evaluation of competitive abilities
It should be noted that all of failures of a construction enterprise could be attributed to lack of competitive abilities. It is a normal phenomenon for a construction enterprise to fail in market environment. In order to prevent failure, it is important to cultivate enterprise competitive abilities of an enterprise. Competitive abilities of a construction enterprise include three parts: marketing abilities, project management abilities and innovation abilities (Yao, 2003).
A firm must be different enough to have a unique advantage over its competitors, especially in a tough market (Arditi, 2000). Competitive abilities of enterprise are critical to an enterprise, and these abilities also include abilities of manager. An enterprise or a project has life, sometimes its life is longer, sometimes is shorter. It is important for an enterprise or a staff to maintain health status. Consequently, evaluation of competitive abilities is a crucial countermeasure to prevent failure for an enterprise.
3. Improving construction management qualities

Qualities are important for a project, an enterprise, or a manager. A manager should emphasize enterprise’s qualities, and a staff should pay attention on his qualities. Qualities of an enterprise, a staff and a manager are different. Therefore, it must be emphasized that everyone should study in all life. Development of a construction enterprise lies on development of employee’s abilities. Best method to improve qualities of employee is to promote employee training and make him a talented person.

4. Independent professional inspecting and supervising

Business and management of a construction enterprise needs independent professionals to supervise. For instance, cost engineers can evaluate exactly and budget prudently; chief inspectors can supervise efficiently; registered structure engineer can calculate accurately and save money; an independent construction professional can furnish full time inspection and strong supervision should be provided to avoid ‘short cuts’ by workers. Sometimes, improper construction designing will lead to waste. For instance, if structural design is as secure as possible, it will construct a blockhouse instead of a building. A construction enterprise should make use of certified professionals and intermediary agencies. In business and management of construction, intermediary agencies can be employed in many fields.

5. Adopting synthetic prevention measures for failure

Generally, without obtaining the goals, an enterprise fails. Failures will result in losses of tangible assets and invisible assets. The first can be calculated by economic figures, including losses of finance and material resources. Whereas, the latter cannot be calculated by money, such as brand depreciating, enterprise culture is slack and strategy is confusing (Wang, 2002). Failures will bring losses of social fortune and resource. It means that social fortunes are collocated wrongly, and great deals of social wealth are destroyed. It even will result in a mass of unemployment, accidents, disasters, crimes, and so on.

In one word, losses brought by failure are various. It is necessary to analyze failures from various fields and various angles, and adopt synthetic prevention countermeasures to control failure accordingly.
2.4 Previous studies for construction contracts termination

The purpose of the contract is to establish the rights, duties, obligation, and responsibilities of the parties and to allocate the risk. The acceptance of an obligation or duty brings with it acceptance of commensurate risk, which is the risk of being unable to fulfill the obligation or duty because of one’s own inadequate, incapacity, inadvertence, or error, or because of interference from outside sources or events. But with any contractual agreement the contract defines only the ground rules, the execution of contract rests on good well, intent and relationship between the parties. (Flanagan & Norman, 1993).

Al-Hallaq (2003), in his thesis study illustrated that the cause of contractors failure are: delay in collecting bids from clients (donors), closure, depending on banks and paying high profits, lack of capital, cash flow management, lack of experience in the field of work in Gaza Strip, absence of construction regulations, low margins of profit due to competition, award contract to lowest price, and lack of experience in contracts.

Enshassi et al. (2006) in their paper explore the causes of contractor's business failure in Palestine, and investigate their severity from the contractor's point of view. The study's results shows that the main causes of business failure are delay in collecting debt from clients (donors), border closure, heavy dependence on bank loans and payment of high interest on these loans, lack of capital, absence of industry regulations, low profit margin due to high competition, awarding contracts by client to the lowest bidder, and lack of experience in contract management.

Anderson (2010) in her Assay titled "The top three causes of project failure". She shows that the common three causes are:
1- Lack of clearly designated project leader;
2- Lack of clear expectations and goals;
3- Communications challenges.
Belassi et al. (1996) in their paper grouped the success or failure factors into four areas

- Factors related to the project;
- Factors related to the project manager and the team members;
- Factors related to the organization;
- Factors related to the external environment.

The paper demonstrates the differences between the critical success factors and the factors identified with the use of our scheme. Many critical factors, such as factors related to projects manager’s performance, factors related to team members and environmental factors, became apparent with this study. The results are encouraging, in that practitioners support the use of this scheme for determining and analyzing critical success factors and how systems respond to these factors and illustrate that project manager’s managerial skills are the most critical factors while environmental factors take the lead in construction.

Hamdia (2008), in his thesis study (Investigate of critical success factors for construction sector in Gaza Strip) shows that the most notable findings of this research were, about 71% of contracting companies in Gaza Strip have a clear description of goals and mission, financial resources is the first Critical Success Factors (CSF), the second CSF is owner satisfaction. In addition, Pricing polices CSF was the third. Also the forth CSF was related to Managerial Skills for contractors. Furthermore, cost control CSF was the fifth. Finally, Mission and Goal has the sixth one. He recommended the necessity for contractors in Gaza Strip to be more interested in strategic planning, to formulate and apply adequate CSFs; and contractors in Gaza Strip must apply modern managerial approaches and scientific tools; as well as top manager in contracting company in Gaza Strip shouldn’t concentrate efforts on financial issues, but they are required to be interested in other topics as, human resource development, owner satisfaction, and cost reduction.

Albert et al. (2001) in their study that aimed to identify a set of project success factors for Design and Build (D&B) projects and examine the relative importance of these factors on project outcome. Six project success factors (project team commitment, contractor's
competences, risk and liability assessment, client's competences, end-user's needs and constraints imposed by end users) were extracted from factor analysis of data provided by 53 participants of public sector D&B projects through a questionnaire survey. Project team commitment, client's competences and contractor's competences were found to be important to bring successful project outcome from the multiple regression findings. Contractor’s competences also contributed to project time performance. Project team members should also recognize that time and cost performance as well as quality of design and workmanship represents the key elements of overall success of D&B projects. Practitioners are advised to focus on teamwork and partnering for successful project completion.

Abu Mousa (2005), in his thesis study about gain understanding of 44 risk factors that could face the building projects in Gaza Strip and also to investigate the effectiveness of risk preventive and mitigate methods. The study illustrated that "The most important risk factors are: financial failure of the contractor, working at hot (dangerous) areas, closure, defective design and delayed payments on contract. On the other hand, owner respondents concluded that the most important risk factors are: awarding the design to unqualified designer, defective design, occurrence of accidents, difficulty to access the site, and inaccurate quantities".

Kartam and Kartam (2001) in their paper present an attitude of typically large Kuwaiti contractor towards construction risk. The paper is concerned with the assessment and allocation risk as well as contribution of each risk type to project delay. The paper also investigate the best contractual arrangements and the most effectives approaches towards preventing or minimizing construction risk. The study illustrated that "Financial failure has been consider to be the most significant risk category and a contractors cloud suffer from in Kuwait".

El Karriri et al. (2011) in their paper show that the political factors and clients' related factors like (Israel invasion, Imposed closure at Gaza Strip, clients bankruptcy, clients' bad financial situation, and location of some projects at hot regions) were shown as a part of the critical drivers for contract termination in construction projects.
Dvir (2005) in his paper examines the relationship between planning and preparing the project termination and commission and project success. The paper suggests that customer participation in the development process and final user preparations have the highest impact on project success. Customer participation in the development process is highly correlated with project efficiency (0.45), while final user preparations are highly correlated with customer benefits (0.46).

De (2001) in his paper analyzes the key problems faced by project management professionals in terminating projects in Indian Industry. The paper shows that negotiating claims with clients, compliance of statutory requirements, receipt of the final installment of payment, performance guarantee tests, and handling claims of suppliers are the key problems faced by the project managers in India in terminating projects.

Dilts et al. (2006) in their paper investigate the impact of job position or role, when making the decision to cancel a project and the impact of different information gathering activities, such as information scanning richness of media used, and diversity of information sources by examining the perspectives of decision makers who have cancelled or terminated a public sector project. Two decision-making roles are studied: executives, those with the authority to start or cancel a project, and project managers, those who direct the day-to-day operations of the project. The paper illustrate that in project success or failure cannot ignore the impact of role.

Table 2.1 Summarize the factors affecting on construction contracts termination
Table 2.1 Summary of driven the factors affecting on termination

<table>
<thead>
<tr>
<th>Managerial</th>
<th>Financial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of experience in the line of work</td>
<td>Ability to use computer in management</td>
</tr>
<tr>
<td>Company organization</td>
<td>Ability to work as a team</td>
</tr>
<tr>
<td>Frauds</td>
<td>Unclear goals</td>
</tr>
<tr>
<td>Neglect</td>
<td></td>
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<tr>
<td>Inaccurate quantities</td>
<td></td>
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<tr>
<td>Unmanaged cash flow</td>
<td></td>
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<tr>
<td>Resource management</td>
<td></td>
</tr>
<tr>
<td>Poor communication between involved parties</td>
<td></td>
</tr>
<tr>
<td>Ability to put plans to work</td>
<td></td>
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<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*P* indicates a factor identified by multiple studies.
| P | Low margin of profit due to competition | 2.1 |
|   | Lack of capital                          | 2.2 |
| P | Difference of local currency exchange with | 2.3 |
|   | contract currency                        |     |
| P | Client delay in the contractor financial | 2.4 |
|   | payments.                                |     |
| P | Contractors bankrupting or insolvent      | 2.5 |
| P | Evaluation of profit yearly              | 2.6 |
| P | Material wastages                        | 2.7 |
| P | Ability to negotiating claims with clients.| 2.8 |
| P | Increment of project size                | 2.9 |
| P | Average number of full time employees    | 2.10|
| P | Cost and time organization (cash flow and |   |
|   | schedule)                                | 2.11|

<table>
<thead>
<tr>
<th>Political</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>Lack of clear expectations</td>
</tr>
<tr>
<td>P</td>
<td>Internal political troubles; as: rebellion, civil</td>
</tr>
<tr>
<td></td>
<td>war, or disorder.</td>
</tr>
<tr>
<td>P</td>
<td>Change in regulatory problems</td>
</tr>
<tr>
<td>P</td>
<td>Increment of material prices</td>
</tr>
<tr>
<td>Policies</td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td>---</td>
</tr>
<tr>
<td>Banks policy</td>
<td>3.5</td>
</tr>
<tr>
<td>Closure</td>
<td>3.6</td>
</tr>
<tr>
<td>Lack of resources</td>
<td>3.6</td>
</tr>
<tr>
<td>Difficulty to get permits</td>
<td>3.7</td>
</tr>
<tr>
<td>Change in funding source</td>
<td>3.8</td>
</tr>
<tr>
<td>Inflation in world</td>
<td>3.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Environmental Policies</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Adverse climate conditions</td>
<td>4.1</td>
</tr>
<tr>
<td>Social environment</td>
<td>4.2</td>
</tr>
<tr>
<td>Accounting and tax practices</td>
<td>4.3</td>
</tr>
<tr>
<td>Working at hot (dangerous) areas</td>
<td>4.4</td>
</tr>
<tr>
<td>National slump in economy</td>
<td>4.5</td>
</tr>
<tr>
<td>Change in resources (people, materials, funds)</td>
<td>4.6</td>
</tr>
<tr>
<td>No specialized arbitrators to help settle fast</td>
<td>4.7</td>
</tr>
<tr>
<td>Acts of God (Natural disaster)</td>
<td>4.8</td>
</tr>
<tr>
<td>Fare of project position to company</td>
<td>4.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project Characteristic</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in the type of work</td>
<td>5.1</td>
</tr>
<tr>
<td>Size &amp; value</td>
<td>5.2</td>
</tr>
<tr>
<td>Life cycle period</td>
<td>5.3</td>
</tr>
</tbody>
</table>
5.4 Increase size of projects
5.5 Wrong estimation for the total time of the project.
5.6 Project position
5.7 Change in overall project complexity
5.8 Quality of work
5.9 Wrong cost estimation
2.5 Common causes of project termination (Failure)
The UK Office of Government Commerce, (2005) cited the common causes of termination of project as follow:

1. Lack of clear links between the project and the organization's key strategic priorities, including agreed measures of success.
   - Do we know how the priority of this project compares and aligns with our other delivery and operational activities?
   - Have we defined the critical success factors (CSFs) for the project?
   - Have the CSFs been agreed with suppliers and key stakeholders?
   - Do we have a clear project plan that covers the full period of the planned delivery and all business change required, and indicates the means of benefits realization?

2. Lack of clear senior management and Ministerial ownership and leadership.
   - Does the project management team have a clear view of the interdependencies between projects, the benefits, and the criteria against which success will be judged?
   - If the project traverses organizational boundaries, are there clear governance arrangements to ensure sustainable alignment with the business objectives of all organizations involved?
   - Are all proposed commitments and announcements first checked for delivery implications?
   - Are decisions taken early, decisively, and adhered to, in order to facilitate successful delivery?

3. Lack of effective engagement with stakeholders.
   - Have we identified the right stakeholders?
   - Have we as intelligent customers, identified the rationale for doing so (e.g. the why, the what, the who, the where, the when and the how)?
   - Have we secured a common understanding and agreement of stakeholder requirements?
   - Does the business case take account of the views of all stakeholders including users?
• Do we understand how we will manage stakeholders (e.g. ensure buy-in, overcome resistance to change, allocate risk to the party best able to manage it)?

4. Lack of skills and proven approach to project management and risk management.
• Is there a skilled and experienced project team with clearly defined roles and responsibilities? If not, is there access to expertise, which can benefit those fulfilling the requisite roles?
• Are the major risks identified, weighted and treated by the SRO, the Director, and Project Manager and/or project team?
• Has sufficient resourcing, financial and otherwise, been allocated to the project, including an allowance for risk?

Al-Hallaq (2003) illustrated in his study the causes of contractor's failure in Gaza Strip are:
• Delay in collecting dibs from donors
• Closure
• Depending on banks and paying high
• Lack of capital
• Lack of experience in the line of work
• Cash flow management
• Segmentation of Gaza Strip
• Low margin of profit due to competition
• Lack of experience in contracts
• Award contracts to lowest price

Anderson (2010) in her Assay titled shows that the common three causes of project failure are:
1- Lack of clearly designated project leader;
2- Lack of clear expectations and goals;
3- Communications challenges.
And the UK Office of Government Commerce, (2005) cited the common causes of termination of project also as follow:

1. Too little attention to breaking development and implementation into manageable steps.
   - Has the approach been tested to ensure it is not 'big-bang' (e.g. in IT-enabled projects)?
   - Has sufficient time been built-in to allow for planning applications in Property & Construction projects for example?
   - Have we done our best to keep delivery timescales short so that change during development is avoided?
   - Have enough review points been built-in so that the project can be stopped, if changing circumstances mean that the business benefits are no longer achievable or no longer represent value for money?

2. Evaluation of proposals driven by initial price rather than long-term value for money (especially securing delivery of business benefits).
   - Is the evaluation based on whole-life value for money, taking account of capital, maintenance and service costs?
   - Do we have a proposed evaluation approach that allows us to balance financial factors against quality and security of delivery?
   - Does the evaluation approach take account of business criticality and affordability?
   - Is the evaluation approach business driven?

3. Lack of understanding of, and contact with the supply industry at senior levels in the organization.
   - Have we tested that the supply industry understands our approach and agrees that it is achievable?
   - Have we asked suppliers to state any assumptions they are making against their proposals?
   - Have we checked that the project will attract sufficient competitive interest?
   - Are senior management sufficiently engaged with the industry to be able to assess supply-side risks?
• Do we have a clear strategy for engaging with the industry or are we making sourcing decisions on a piecemeal basis?

• Are the processes in place to ensure that all parties have a clear understanding  

4. Lack of effective project team integration between clients, the supplier team and the supply chain.

• Has a market evaluation been undertaken to test market responsiveness to the requirements being sought?

• Are the procurement routes that allow integration of the project team being used?

• Is there early supplier involvement to help determine and validate what outputs and outcomes are sought for the project?

• Has a shared risk register been established?

2.6 The 6 steps guide to a smooth closure (termination)

Maylor, 2005 groups the necessary activities into a six step procedure, which can differ depending on the size and the scope of the project the project close out and it is very necessary and important to a project (contract) when it is terminated:

2.6.1 Completion

First of all, the project manager must ensure the project is 100% complete. (Young, 2003) noticed that in the closeout phase "it is quite common to find a number of outstanding minor tasks from early key stages still unfinished. They are not critical and have not impeded progress, yet they must be completed". Furthermore, some projects need continuing service and support even after they are finished, such as IT projects. While it is helpful when this demand is part of the original statement of requirements, it is often part of the contract closeout. (Rosenau and Githens, 2005) suggest that "the contractor should view continuing service and support as an opportunity and not merely as an obligation" since they can both learn from each other by exchanging ideas.

2.6.2 Documentation

Mooz et al (2003) defines documentation as "any text or pictorial information that describe project deliverables". The importance of documentation is emphasized by (Pinkerton, 2003) who notes that "it is imperative that everything learned during the project, from conception through initial operations, should be captured and become an asset". A detailed documentation will allow future changes to be made without
extraordinary effort since all the aspects of the project are written down. Documentation is the key for well-organized change of the project owner, i.e. for a new investor that takes over the project after it is finished. (Thompson, 2005) makes a distinction between the documentation requirements of the internal and the external clients since the external party usually needs the documents for audit purposes only. Despite the uninteresting nature of documenting historical data, the person responsible for this task must engage actively with his assignment.

2.6.3 Project systems closure

All project systems must close down at the closeout phase. This includes the financial systems, i.e. all payments must be completed to external suppliers or providers and all work orders must terminate (Department of Veterans Affairs, 2004). "In closing project files, the project manager should bring records up to date and make sure all original documents are in the project files and at one location" (Arora, 1995). (Maylor, 2005) suggest that "a formal notice of closure should be issued to inform other staff and support systems that there are no further activities to be carried out or charges to be made". As a result, unnecessary charges can be avoided by unauthorized expenditure and clients will understand that they can not receive additional services at no cost.

2.6.4 Project reviews

The project review comes usually comes after all the project systems are closed. It is a bridge that connects two projects that come one after another. Project reviews transfer not only tangible knowledge such as numerical data of cost and time but also the tacit knowledge which is hard to document. ‘Know-how’ and more important ‘know-why’ are passed on to future projects in order to eliminate the need for project managers to ‘invent the wheel’ from scratch every time they start a new project. The reuse of existing tools and experience can be expanded to different project teams of the same organization in order to enhance project results (Bucero, 2005). Reviews have a holistic nature which investigate the impact of the project on the environment as a whole. Audits can also be helpful but they are focused on the internal of the organization. Planning the reviews should include the appropriate time and place for the workshops and most important the people that will be invited. Choosing the right people for the review will enhance the value of the meeting and help the learning process while having an objective critique not only by the team members but also from a neutral external auditor. The outcome of this review should be a final report which will be presented to the senior management and the project sponsor. (Whitten, 2003) also notices that "often
just preparing a review presentation forces a project team to think through and solve many of the problems publicly exposing the state of their work”.

### 3.6.5 Disband the project team

Before reallocating the staff amongst other resources, closeout phase provides an excellent opportunity to assess the effort, the commitment and the results of each team member individually. Extra-ordinary performance should be complemented in public and symbolic rewards could be granted for innovation and creativity (Gannon, 1994). This process can be vital for team satisfaction and can improve commitment for future projects (Reed, 2001). Reviewing a project can be in the form of a reflective process, where project managers "record and critically reflect upon their own work with the aim of improving their management skills and performance" (Loo, 2002). It can also be applied in problematic project teams in order to identify the roots of possible conflicts and bring them into an open discussion.

Ignoring the established point of view of disbanding the project team as soon as possible to avoid unnecessary overheads, (Meredith and Mandel, 2003) imply that it’s best to wait as much as you can for two main reasons. First it helps to minimize the frustration that might generate a team member’s reassignment with unfavourable prospects. Second it keeps the interest and the professionalism of the team members high as it is common ground that during the closing stages, some slacking is likely to appear.

### 2.6.6 Stakeholder satisfaction

PMBoK (2004) defines that "actions and activities are necessary to confirm that the project has met all the sponsor, customer and other stakeholders’ requirements". Such actions can be a final presentation of the project review which includes all the important information that should be published to the stakeholders. This information can include a timeline showing the progress of the project from the beginning until the end, the milestones that were met or missed, the problems encountered and a brief financial presentation. A well prepared presentation which is focused on the strong aspects of the projects can cover some flaws from the stakeholders and make a failure look like an unexpected success.
2.7 Impacts of project parties (Stakeholders) on project termination

Nowadays, project management has become a key activity in most modern organizations. Projects usually have a wide variety of objectives, involve numerous internal and external actors, and are conducted in various activity sectors. Since 1980, many academics and practitioners have agreed that human resource management (HRM) is one of the most crucial elements of an organization's success (Belout et al., 2004).

The project management identifies two requirements for an effective client–contractor relationship. Firstly, contractor organizations must be customer-focused, in terms of understanding and fulfilling the expectations of the client. This customer-focus has been stated as a precursor to success. Secondly, client organizations must be focused on understanding and accommodating the expectations of all stakeholders in the supply chain, such as contractors, sub-contractors, suppliers and other team members, with "project stakeholders" defined as "people or organizations who have a vested interest in the environment, performance and/or outcome of the project. This focus on other stakeholders will create "win-win" situations through trust, openness, teamwork and shared goals (Bryde et al., 2005).

Stakeholders are individuals, groups or organizations, institutions and others that are actively involved in a project and whose interests may be positively or negatively affected by the project execution. They may also exert influence over the project and its results. In short, they are claimants who claim ownership, who have rights or interests in a project and its activities. Hence, every project is influenced and must be managed from a perspective that goes beyond the basic relationship between customers and companies that perform the project (Seid, 2008).

The pre-qualification of construction contractors is a very important step in project procurement. Pre-qualification is the process of screening contractors. The selection of a qualified contractor gives confidence to the client that the selected contractor can achieve the project goals (El-Sawalhi, 2007).

The responsibility of project integration requires the project manager to perform three key tasks. Firstly, the project manager has to implement an effective planning and control system for all the project activities. Secondly, all communication links within and outside the project need to be established and maintained. Finally, effective project integration requires the project manager to act quickly to resolve internal and external
conflicts before they start to threaten project budget, scheduling and performance specification (Ogunlana et al., 2002).

The employer plays the most important role within the construction process and therefore, he is the most important party to the contract for without him there would be no contract and no work for consultants and contractors (Seid, 2008). Figure 2.4 shows the relationships between employer, contractor and engineer.

Owners of projects under construction have three common goals: completion of the project at the lowest reasonable price, within a stated time, and to a specified quality (Abubshait, 1994).

Owners’ competencies that affect project success include their capability in managing projects, their understanding of project scope and being able to clearly articulate end-users’ needs. Owners who have competencies such as being knowledgeable, enlightened and having initiative would facilitate project-based integrated teams, leading to higher project performance (Yng Ling et al., 2008).

Figure 2.4: Stakeholders relationship
2.8 Methods of the disputes on construction projects

Construction Disputes are generally complex with many intertwined issues involving multiple claims and counterclaims, which arise mainly because of the uniqueness of the construction contract itself. Furthermore, construction contracts have inherent characteristics that render any disputes arising from them unique (Bunni, 2000).

One of the most reasons that can affect the completion of projects is disputes. It is normal to have disputes in construction projects due to the related contract nature. The procurement, execution and completion of construction and engineering contracts differ from other contracts in many respects (Abu Rass, 2006).

In today's complex construction projects, resolving disputes has become an inevitable part of a project manager’s work (Cheung, 1999). The methods of resolving disputes range from informal negotiation to formal proceedings like arbitration and litigation. Arbitration and litigation proceedings have proved to be time consuming and expensive. In addition, these proceedings are often confrontational and require many hours of unproductive effort (Cheung and Yeung, 1998). The dispute is defined by Brown and Marriot “as a class or kind of conflict, which manifests itself in distinct and justifiable issues. It involves disagreement over issues capable of resolution by negotiation, mediation or third party adjudication” (as cited in Yates, 2003).

There are numerous methods available in the international commercial world for resolving disputes between two contracting parties. The most important methods are litigation through the courts of a country and arbitration. The available methods (techniques) that can resolve the construction disputes vary from formal to informal methods. This formality depends on the degree of documentation of the technique procedures and its resolution binding. Table 2.2 shows the methods of disputes construction.
Table 2.2 Methods of disputes construction

<table>
<thead>
<tr>
<th>Dispute resolution technique (DRT)</th>
<th>Definition of DRT</th>
<th>Some attributes of DRTs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Negotiation</strong></td>
<td>Processes whereby two or more parties attempt to settle what each shall give and take, or perform and receive in a transaction between them.</td>
<td>Strengths</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Promotes cooperation.</td>
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<tr>
<td></td>
<td></td>
<td>Cost efficient.</td>
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<tr>
<td></td>
<td></td>
<td>Promotes open process.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Encourages Participation.</td>
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<td></td>
<td></td>
<td>High degree of Participant control.</td>
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<tr>
<td></td>
<td></td>
<td>Helps create alternative options</td>
</tr>
<tr>
<td><strong>Mediation</strong></td>
<td>An impartial third party attempts to keep communication lines open, point out areas of agreement, encourage and assist disputants to resolve their differences using compromise and negotiation.</td>
<td>Weaknesses</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Some parties may lack negotiation skills.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Power balance is not assured.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Process can be expensive.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Participants may lack skills.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A balance of power not assured.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Win-lose outcomes possible.</td>
</tr>
<tr>
<td><strong>Arbitration</strong></td>
<td>A process similar to litigation but the decision of the impartial third party may or may not be binding depending on the prior wishes of the disputants.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Supported by established law and legislation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Adversarial.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Can be lengthy process.</td>
</tr>
<tr>
<td><strong>Litigation</strong></td>
<td>Involves courts and a neutral third party that decides the outcome based on law.</td>
<td>Conclusion</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Decisions.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Supported by law.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Costly.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Win-lose outcomes common.</td>
</tr>
</tbody>
</table>

Sources: (David et al., 2003)
Chapter 3

Methodology

3.1 Introduction
This chapter details the methodology and procedures which are used in the field of study. This chapter deals with the research method, research population and sample, sample characteristics, pilot study, research tools, Internal Consistent Validity, Questionnaire Reliability, as well as list of statistical procedure used in the study.

3.2 Research design
Research design is an action plan for obtaining answers to the questions being studied. It is a method for getting from "here" to "there" where "here" may be defined as the initial set of questions to be answered, and "there" is some set of conclusion or answers about these questions. Between "here" and "there" a number of major steps may be found including the collection and analysis of relevant data (Naoum, 2007).

In this research, The problem of the study (construction contracts termination) was identified, then it was defined and the related objectives of the study were set. Thoroughly a research proposal and a plan was done. The literature review was done accordingly.

To collect data a questionnaire was designed as a mean of research through pilot study, validity, and reliability.

The sample of study was collected, analyzed and discussed to get the results, conclusion and recommendations.

All elements of the research in this chapter such as sample size, sample location, validity and reliability ….etc. were explained and discussed in details.

Figure 3.1 summarizes the all the research phases.
Figure 3.1: Research summary
3.3 Research method:
This research used descriptive analytical method. Also primary and secondary data were used.

3.3.1 Primary data
To analyze the qualitative and quantitative characteristics of the contracts termination, it has been depends on collecting the primary data by questionnaire ( see annexes 1,2) as a main tool for the study, it saves time and effort. The questionnaire was designed especially for this study and contains three parts:
1- Organization Profile and personal characteristics of the responses.
2- Evaluation of the current situation in Gaza Strip for project termination.
3- Project termination factors ( Managerial factors, Financial factors, Political factors, Environmental factors, Project characteristic factors).

3.3.2 Secondary data
To introduce the theoretical literature of the subject, the researcher used the following data sources:
1. Books and references;
2. Periodicals, papers and master theses;
3. Palestinian statistic center and Palestinian contractors union;
4. Internet and its electronic versions.

3.4 Population
The population of this study is represented by contracting companies specialized in the field of buildings and infrastructure in the Gaza Strip and officially registered with the national committee for contractors classification of the Palestinian contractors union until 15/6/2011. The P.C.U in Gaza Strip divided the contracting companies into five major categories depending on their size, capitals, executed projects, equipment values, and qualifications of the technical staff.

3.5 Sample size determination
Wood and Haber (1998) defined the sampling as the process of selecting representative units of a population for the study in research investigation. A sample is a small proportion of a population selected for observation and analysis.
Statistical equations were used in order to calculate the sample size for the contractors. Equation 3.1 was used to determine the sample size of the unlimited population. (Creative Research Systems, 2001):

\[ SS = \frac{Z^2 \times P \times (1 - P)}{C^2} \]  
Equation 3.1

Where \( SS \) = Sample Size.
\( Z \) = Z Value (e.g. 1.96 for 95% confidence interval).
\( P \) = Percentage picking a choice, expressed as decimal, (0.50 used for sample size needed).
\( C \) = Maximum error of estimation (9%)

\[ SS = \frac{1.96^2 \times 0.5 \times (1 - 0.5)}{0.09^2} = 118 \]

\[ SS_{\text{New}} = \frac{SS}{1 + \frac{SS - 1}{POP}} \]

Where pop is the population = 190 match the proposed classes contracting companies according to the PCU records (The first three classes).

\[ SS_{\text{New}} = \frac{118}{1 + \frac{118 - 1}{190}} = 73 \]

The total number distributed to contractors was 90 questionnaires.

### 3.6 Research location

The research was carried out in Gaza Strip, which consists of five governorates; namely 26 contractors from Gaza and North, 13 from the Middle Area, 23 from Khan-Younis and 8 contractors from Rafah governorates. These five areas are considered the southern governorates of the Palestinian territories as shown in Figure 3.2.
3.7 Questionnaire design and contents

There are two types of research strategies namely quantitative research and qualitative research (Naoum, 2007). Quantitative approaches seek to gather factual data and to study relationships between facts and how such facts and relationships accord with theories and the findings of any research executed previously (Fellows and Liu as cited in Al-Najjar, J., 2008).

According to the review of literature and after interviewing experts the study tool was developed, a questionnaire was designed in Arabic language (Annex 1), with English version attached in (Annex 2). The questionnaire was provided with a covering letter which explained the purpose of the study, the way of responding, the aim of the research and the security of the information in order to encourage high response. The questionnaire composed of three sections, as follows:

The first section is about the organization profile and personal characteristics of the responses.

The second section is about evaluation the current situation in Gaza Strip for project termination.

The third section is about project termination factors (Managerial factors, Financial factors, Political factors, Environmental factors, Project characteristic factors).

In this research, a questionnaire with structural review is used for the data gathering. Naoum (2007) summarized the main advantages of structural review as follows:
"The answer can be more accurate. The response rate relatively high (approximately 60-70%), especially if interviewees are contacted directly.

3.8 Pilot study
Drafting of a good questionnaire is a highly specialized job and requires great care, skill, wisdom, efficiency and experience. No hard and fast rules can be laid down for designing or framing a questionnaire.
These structured questionnaires should be based on a carefully prepared set of questions piloted and refined until the researcher is convinced of their validity. Therefore the pre-testing is an important stage in the questionnaire design process, prior to finalizing the questionnaire. It involves administrating the questionnaire to a limited number of potential respondents and other knowledgeable individuals in order to identify and correct design flaws (Al-Najjar, 2008).
The Arabic version of questionnaire was to test the meaning of the questions and making sure that the questions are clear and easily understandable without duplications in the meanings. The test was made by distributing five drafts of the questionnaire. In general, contractors agreed that the questionnaire is suitable to achieve the goals of the study.

The following comments and some modifications have been done:
1. Some factors and sentences should be modified or represented with more details
2. Some factors were repeated more than one time with the same meaning. So, it should be eliminated these repeated factors
3. Some factors and sentences should be modified in order to give clearer meaning and understanding.
4. Some words and sentences need to be cleared

3.9 Response rate
The questionnaire was distributed to the 90 construction company's registered in the Palestinian contractors union (PCU), and 75 questionnaires were returned, which gives 83% response rate but only 73 questionnaires were considered valid because they were answered correctly as shown in Figure 3.3.
3.10 Validity of the research

Burns and Grove (1993) define the validity of an instrument as a determination of the extent to which the instrument actually reflects the abstract construct being examined. There are two ways to evaluate instrument validity: content validity and statistical validity, which include criterion-related validity and construct validity.

3.10.1 Content validity of the questionnaire

Content validity test was conducted by consulting five experts to evaluate the content of the questionnaire. In general, they agreed that the questionnaire is suitable to achieve the goals of the study. Important comments and some modifications have been done.

3.10.2 Statistical validity of the questionnaire

Statistically, to insure the validity of the questionnaire, two statistical tests should be applied. The first test is criterion-related validity test (Spearman test) which measures the correlation coefficient between each paragraph in one group and the whole groups. The second test is structure validity test (Spearman test) that used to test the validity of the questionnaire structure by testing the validity of each group and the validity of the whole questionnaire. It measures the correlation coefficient between one group and all the groups of the questionnaire that have the same level of similar scale (Abdal-Hadi, 2010).

Spearman’s rank correlation coefficient, like all other correlation coefficients, will take a value between -1 and +1. A positive correlation is one in which the ranks of both
variables increase together. A negative correlation is one in which the ranks of one
variable increase as the ranks of the other variable decrease. A correlation of +1 or -1
will arise if the relationship between the two variables is exactly linear. A correlation
close to zero means there is no linear relationship between the ranks (Altman, 1991).

\[ r_s = \frac{1 - 6 \sum_{i=1}^{n} d_i^2}{n^3 - n} \]  
(Gauthier, 2001)  

Equation 3.2

where:

- \( r_s \) = Spearman's rank correlation coefficient
- \( d_i \) = the difference in ranking between the usage and effectiveness of factors
- \( n \) = the number of factors.

Table 3.1 Correlation coefficient alpha of termination construction contracts groups

<table>
<thead>
<tr>
<th>No. groups</th>
<th>No. of Items</th>
<th>Correlation Coefficient</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Political Factors</td>
<td>12</td>
<td>0.617</td>
<td>0.000</td>
</tr>
<tr>
<td>2 Managerial Factors</td>
<td>11</td>
<td>0.362</td>
<td>0.001</td>
</tr>
<tr>
<td>3 Financial Factors</td>
<td>10</td>
<td>0.349</td>
<td>0.002</td>
</tr>
<tr>
<td>4 Project Characteristic Factors</td>
<td>9</td>
<td>0.132</td>
<td>0.013</td>
</tr>
<tr>
<td>5 Environmental Factors</td>
<td>9</td>
<td>0.502</td>
<td>0.000</td>
</tr>
</tbody>
</table>

As shown in Table 3.1 for the questionnaire groups, the p-values are less than 0.05 or
0.01, so the correlation coefficients of all the groups are significant at \( \alpha = 0.01 \) or \( \alpha = 0.05 \). It can be said that the groups are consistent and valid to measure. This supports
achieving the main aim of the study.
3.11 Reliability of the research

3.11.1 Split-Half coefficient method

This method depends on finding Pearson correlation coefficient between the means of odd questions and even questions of each field of the questionnaire. Then, correcting the Pearson correlation coefficients can be done by using Spearman Braun correlation coefficient of correction. The corrected correlation coefficient (consistency coefficient) is computed according to the following equation: \[ \text{Consistency coefficient} = \frac{2r}{r + 1} \] (Murairwa et al., 2010)

Where \( r \) is the Pearson correlation coefficient.

The normal range of corrected correlation coefficient \( \frac{2r}{r + 1} \) is between 0.0 and +1.0.

Table 3.2 Split-Half coefficient of termination construction contracts groups

<table>
<thead>
<tr>
<th>No. of groups</th>
<th>No. of Items</th>
<th>Split-Half Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Political Factors</td>
<td>12</td>
<td>0.876</td>
</tr>
<tr>
<td>2 Managerial Factors</td>
<td>11</td>
<td>0.876</td>
</tr>
<tr>
<td>3 Financial Factors</td>
<td>10</td>
<td>0.707</td>
</tr>
<tr>
<td>4 Project Characteristic Factors</td>
<td>9</td>
<td>0.866</td>
</tr>
<tr>
<td>5 Environmental Factors</td>
<td>9</td>
<td>0.893</td>
</tr>
</tbody>
</table>

The normal range of corrected correlation coefficient \( \frac{2r}{r + 1} \) is between 0.0 and +1.0. As shown in Table 3.2, all the corrected correlation coefficients values are between 0.0 and +1.0. It can be said that according to the Half Split method, the termination construction contracts groups are reliable.

3.11.2 Cronbach's coefficient alpha

This method is used to measure the reliability of the questionnaire between each field and the mean of the whole fields of the questionnaire. Cronbach's alpha is a measure of internal consistency, that is, how closely related a set of items are as a group. A "high" value of alpha is often used as evidence that the items measure an underlying (or latent) construct (UCLA, 2011).
The normal range of Cronbach’s coefficient alpha value between 0.0 and +1.0, and the higher values reflect a higher degree of internal consistency (George and Mallery, 2003). If the average inter-item correlation is low, alpha will be low. As the average inter-item correlation increases, Cronbach’s alpha increases as well (UCLA, 2011).

Table 3.3 Cronbach’s alpha and internal consistency (Prabhala, 2011)

<table>
<thead>
<tr>
<th>Cronbach's alpha</th>
<th>Internal consistency</th>
</tr>
</thead>
<tbody>
<tr>
<td>α ≥ 0.9</td>
<td>Excellent</td>
</tr>
<tr>
<td>0.9 &gt; α ≥ 0.8</td>
<td>Good</td>
</tr>
<tr>
<td>0.8 &gt; α ≥ 0.7</td>
<td>Acceptable</td>
</tr>
<tr>
<td>0.7 &gt; α ≥ 0.6</td>
<td>Questionable</td>
</tr>
<tr>
<td>0.6 &gt; α ≥ 0.5</td>
<td>Poor</td>
</tr>
<tr>
<td>0.5 &gt; α</td>
<td>Unacceptable</td>
</tr>
</tbody>
</table>

Table 3.4 Cronbach's coefficient alpha of termination construction contracts groups

<table>
<thead>
<tr>
<th>No. groups</th>
<th>No. of Items</th>
<th>Cronbach's coefficient alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Political Factors</td>
<td>12</td>
<td>0.772</td>
</tr>
<tr>
<td>2 Managerial Factors</td>
<td>11</td>
<td>0.744</td>
</tr>
<tr>
<td>3 Financial Factors</td>
<td>10</td>
<td>0.626</td>
</tr>
<tr>
<td>4 Project Characteristic Factors</td>
<td>9</td>
<td>0.819</td>
</tr>
<tr>
<td>5 Environmental Factors</td>
<td>9</td>
<td>0.834</td>
</tr>
</tbody>
</table>

As shown in Table 3.4, the Cronbach's coefficient alpha was calculated for the five groups of termination contracts and the results were in the range from 0.626 and 0.834. This range is considered high and closed to the full value, which is +1.0. These results ensure the reliability of the questionnaire.

3.12 Data measurement scale

In order to be able to select the appropriate method of analysis, the level of measurement must be understood. For each type of measurement, there is/are an appropriate method/s that can be applied and not others. In this research, ordinal scales were used. Ordinal scale as shown in Table 3.5 is a ranking or a rating data that normally uses integers in ascending or descending order.
Table 3.5 Ordinal scales used for data measurement

<table>
<thead>
<tr>
<th>Item</th>
<th>High Important</th>
<th>Important</th>
<th>Medium</th>
<th>Low</th>
<th>Very Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scale</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

The importance index rate compute as (Sambasivan et al., 2007):

The Importance Index Rate (IIR) = \( \frac{5n_1 + 4n_2 + 3n_3 + 2n_4 + n_5}{5(n_1 + n_2 + n_3 + n_4 + n_5)} \)  

Equation 3.3

n1 = number of respondents who answered "High Important"
n2 = number of respondents who answered "Important"
n3 = number of respondents who answered "Medium"
n4 = number of respondents who answered "Low"
n5 = number of respondents who answered "Very Low"

The IIR was used to rank the different causes of construction contracts termination. These rankings made it possible to cross-compare the relative importance of the factors as perceived by contractors.

Table 3.6 IIR and ranking of main groups

<table>
<thead>
<tr>
<th>No.</th>
<th>Factor</th>
<th>IIR</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Political Factors</td>
<td>81.29 %</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Managerial Factors</td>
<td>79.40%</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Financial Factors</td>
<td>78.08%</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>Project Characteristic Factors</td>
<td>74.03%</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>Environmental Factors</td>
<td>73.08 %</td>
<td>5</td>
</tr>
</tbody>
</table>

The Table shows groups have high value of IIR located between (81.29 %) and (73.03 %) as listed in the Table (3.6) it is denoted to the important and vital of these groups and it affected to contract termination.

3.13 Data collection

Data was collected quantitatively by the study survey instrument which was the prepared and piloted questionnaire. Collection of data from the study population sample in the field took about sixty days at least. The average time for filling a questionnaire was about 25 minutes.
3.14 Data analysis

The questionnaire quantitative statistical analysis was done by using Statistical Package for Social Sciences (SPSS) and Excel sheet. The analysis of data was done to rank the severity of termination construction contracts in Gaza Strip. Ranking was followed by comparison of IIR values within groups and for the overall contracts termination.

The following statistical tests were done:
1. Frequencies and percentages.
2. Correlation coefficients to measure the validity of the questionnaire.
3. Half split method and Cronbach's coefficient alpha for questionnaire reliability.
4. The importance Index Rate (IIR).
Chapter 4

4. Results and discussion

This chapter aims to analyze and discuss the empirical data which are collected through the questionnaire distribution.

The chapter is divided into three sections:
4.1 : General information;
4.2 : Evaluation of the current situation in Gaza Strip;
4.3: Project termination factors.

4.1 First part: General information

4.1.1. Type of work executed by the respondents

Each contractor can be classified in more than one field of work. So it is difficult to prepare a complete separation to the contractors according to their fields of works (Buildings, roads, sewage and water).

4.1.2. Company classification

Figure 4.1 indicates the company classification, and the results show that their classification is related to the subject of the study, that 35(47.95%) are first class, 31(42.46%) are second class and 7(9.58%) are third class. And shows the percentage for every classes.

![Classification of Company](image)

Figure 4.1: Classification of the respondents
This distribution indicates that little companies establish in construction field in the last period because of the events occurred in Gaza Strip in the last decade like intifada, closure and internal dispute. Otherwise, The classification system requirements which lead to first class or second class is so easy.

4.1.3. Respondents' occupation
The distribution of the respondents' occupation, (Figure 4.2) shows that 14(19.17%) are directors, 16(21.91%) are project managers, 35(47.94%) are site engineers and 8(10.95%) are office engineers.

![Chart showing distribution of respondents' occupation](image)

Figure 4.2: Respondents' occupation

It is clear that site engineers have got the highest percentage 47.94%. This gives an indication that the site engineers know all the elements of the project e.g. (materials, labors, market,…etc) because they usually work in the site. So they get a good confidence to answers all questions. It is becoming common in Gaza Strip to have a project manager in companies.

4.1.4. Experience years of the respondents
Experience as a general concept comprises knowledge of or skill in or observation of some thing or some event gained through involvement in or exposure to that thing or event.

Figure 4.3 illustrates that 12(16.43%) of the respondents have an experience from 1 to 3 years, 6(8.21%) respondents from 3 to 5 years, 21(28.76%) respondents from 5 to 10
years and 34(46.57%) of them have an experience more than 10 years. And shows experience years of the respondents.

This distribution illustrates that respondents with an experience more than 10 years have the highest percentage (46.57%) and it indicates the contractors bring in engineers who work with the contractor in previous project and who has more experience.

**4.1.5. Experience years of the company**

Experience of a company is measured by the number of years worked in construction field and it differs from year to year. Figure 4.4 shows that 9(12.32%) of the companies have an experience from 1 to 3 years, 5(6.84%) are from 3 to 5 years, 20(27.39%) are from 5 to 10 years and 39(53.42%) of them have an experience more than 10 years.
This distribution illustrates that companies with experience more than 10 years have the highest percentage (53.42%) and it indicates that little of companies established in the last 10 years.

4.1.6. Volume during the last 10 year

As illustrated in Table 4.1 the executed projects with value less than $1 million are 20 projects during the last ten years, 30 projects are from $1 to $2 million, 11 projects are from $2 to $3 million and 9 projects are more than $3 million.

Table 4.1 Volume of executed projects during the last 10 year

<table>
<thead>
<tr>
<th>Volume</th>
<th>Less than $1 million</th>
<th>From $1 to $2 million</th>
<th>From $2 to $3 million</th>
<th>More than $3 million</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frequencies</strong></td>
<td>22</td>
<td>31</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td><strong>Percentage</strong></td>
<td>30.13%</td>
<td>42.46%</td>
<td>15.06%</td>
<td>12.32%</td>
</tr>
</tbody>
</table>

This Table illustrates that companies volume during the last 10 years with value less than $1 million has the highest percentage (42.86%). It also indicates that most of the companies are of small size and most of the executed projects are small size. This is mainly because of the unfavorable political and economical situation in Gaza Strip last 10 years.

4.1.7. Number of labors

As shown in Figure 4.5 (The distribution of the number of labors), The results show that 26(35.61%) are Less than 10, 24(32.87%) are from 10 to less than 15, 12(16.43%) are from 15 to 20 and 11(15.06%) are more than 20.
This distribution illustrates that the number of labors less than 10 and from 10 to 15 have the highest percentage (32.87 %), and (35.61 %) respectively. It indicates the small size of the companies and the small size of the executed projects also.

4.2 Second part: The evaluation of the current situation in Gaza Strip

4.2.1 Company exposed to unnatural termination of project

Figure 4.6 (The distribution of company exposed to unnatural termination of Project), shows that 63 say Yes and 10 say No.
This illustrates that most of the companies in Gaza Strip have suffered from projects termination. And may be traced to the political issues in year 2007.

4.2.2 Number of projects expose to unnatural termination
Unnatural termination means that work on the project has stopped because of the project constraints have been violated or the project objective has become irrelevant to the overall goals. Figure 4.7 (the distribution of the number of project exposed to unnatural termination), illustrates that 47(74.60%) are from 1 to 3, 15(23.81%) are from 3 to 5, 1(1.59%) is from 5 to 10 and 0(0%) is more than 10.

![Figure 4.7: Number of projects expose to unnatural termination](image)

This distribution clarify that little number of projects exposed to unnatural termination or little projects were executed by companies in this period because the events occurred in Gaza Strip like intifada, closure, internal dispute and others.

4.2.3 Records of information about previous terminated project
Table 4.2 shows that the records of information for previous terminated project and the results show that 33(52%) say yes always, 23(37%) say sometimes and 7(7%) say no.
Table 4.2 Records of information for previous project terminated

<table>
<thead>
<tr>
<th>Volume</th>
<th>Yes, always</th>
<th>Yes, sometimes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequencies</td>
<td>33</td>
<td>23</td>
<td>7</td>
</tr>
<tr>
<td>Percentage</td>
<td>52.00%</td>
<td>37.00%</td>
<td>11.00%</td>
</tr>
</tbody>
</table>

This is denoted that the contractors records and keep the information, reasons, data and reports which leads to termination to benefit from its in the future so we find little projects will expose to termination as mentioned before.

4.2.4 Benefits from previous information

Figure 4.8 (The distribution of benefits from previous information) and the results show that 49(77.78%) say yes always, 14(22.22%) say sometimes and 0(0%) say no. And illustrates the percentage.

Figure 4.8: Benefits from previous information

This is denotes that the contractors get benefit from their previous information in the future to avoid projects termination.
4.2.5 Who is responsible for the unnatural project termination in company
As shown in Figure 4.9, 6(9.5%) are contractors, 15(23.8%) are owner, 39(61.9%) are donors and 3(4.7%) are project manager.

![Figure 4.9: Responsible for the unnatural project termination in company](image)

This distribution shows that the donors have the highest value 61.90%. Most of the projects in Gaza Strip funded by external donors who support according to political agenda or for human aids. Projects need to be funded internally.

4.2.6 Solving the resulting dispute from projects (contracts) termination
The dispute is defined as a class or kind of conflict, which manifests itself in distinct and justifiable issues. It involves disagreement over issues capable of resolution by negotiation, mediation or third party adjudication. Figure 4.10 illustrates that 47(74.6%) are negotiation, 10(15.87%) are mediation, 5(7.94%) are arbitration and 1(1.59%) is litigation.
Figure 4.10: Solving the resulting dispute

This show that the contractors and owners understood the situations and events surrounding them which cause projects termination and solve resulting dispute in friendly way.

4.2.7. Satisfaction about the administrative level in company

As shown in Figure 4.11 the contractors is satisfied about the administrative level in the company that 28(38.36%) are very satisfied, 39(53.42%) are satisfied, 6(8.22%) are neutral and 0(0.00%) are unsatisfied.

Figure 4.11: Satisfaction about the administrative level in company
Management is very important for any thing e.g. money, works, time, material and etc.. This distribution illustrates that most of the employee are satisfied or very satisfied about the administrative level about their company. This shows that most of the companies in Gaza Strip are small and they need easy and simple managerial science.

4.2.8. Who has the final decision in company

The best way to make a complex decision is to use an effective process. Clear processes usually lead to consistent, high-quality results, and they can improve the quality of almost everything we do. Figure 4.12 illustrates the distribution who has the final decision and the results show that 54(73.97%) are the director, 13(17.81%) are project managers, 5(6.85%) are site engineers and 1(1.37%) is others.

This is show that the person who has the final decision is the director because he owns the company. He who has the money has the decision. In Gaza Strip companies most of managerial issues goes back to project manager and financial issue goes back to director.
4.3 Third part: Contracts termination factors

4.3.1 Main groups

Table 4.3 IIR and ranking of main groups

<table>
<thead>
<tr>
<th>Factor</th>
<th>IIR</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Political Factors</td>
<td>81.29 %</td>
<td>1</td>
</tr>
<tr>
<td>2. Managerial Factors</td>
<td>79.40%</td>
<td>2</td>
</tr>
<tr>
<td>3. Financial Factors</td>
<td>78.08%</td>
<td>3</td>
</tr>
<tr>
<td>4. Project Characteristic Factors</td>
<td>74.03%</td>
<td>4</td>
</tr>
<tr>
<td>5. Environmental Factors</td>
<td>73.08%</td>
<td>5</td>
</tr>
</tbody>
</table>

As mentioned before, the main groups of factors affecting the project termination were managerial group, financial group, political group, environmental group, and project characteristic factors. As illustrated in Table (4.3), the IIR and ranking of each group is listed above. The most severe group of factors that causes project termination was political group of IIR 81.82 %. It is not strange, because all of sectors in Gaza Strip are affected from this group (Closure, internal dispute, shortage and expensive materials, Funds and …etc.) The last important group of factors that causes project termination was environmental factors with IIR 73.08 %. Because Gaza is a small area comparison with other areas in the world, and has nice weather. It also has a stable tax and accounting system, and experienced labors.

The Table (4.3 ) shows that groups have high value of IIR located between 81.29 % and 73.08 % as listed in the Table (4.3) related to the important and vital of these groups and it affects the projects termination.

4.3.2 IIR and ranking of sub-factors

4.3.2.1 Managerial group

Management today combines creative, business, organizational, analytical and other skills to produce effective goal-oriented results! Some of the key functions in management includes learning to delegate, planning and organizing, communicating clearly, controlling situations, motivating employees, adapting to change, constantly innovating and thinking of new ideas, building a good team and delivering results which are not just figure-bound but results that also focus on overall growth and development.
There are 12 sub-factors under the managerial group and results show the highest value is "Lack of experience in the line of work." and the lowest value is "Ability to use computer in management".

Table 4.4 IIR and ranking of managerial sub-factors

<table>
<thead>
<tr>
<th>Factor</th>
<th>IIR</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Lack of experience in the line of work</td>
<td>88.00%</td>
<td>1</td>
</tr>
<tr>
<td>2. Inaccurate quantities</td>
<td>84.00%</td>
<td>2</td>
</tr>
<tr>
<td>3. Unmanaged cash flow</td>
<td>82.57%</td>
<td>3</td>
</tr>
<tr>
<td>4. Neglect</td>
<td>82.29%</td>
<td>4</td>
</tr>
<tr>
<td>5. Resource management</td>
<td>81.43%</td>
<td>5</td>
</tr>
<tr>
<td>6. Unclear goals</td>
<td>80.00%</td>
<td>6</td>
</tr>
<tr>
<td>7. Ability to put plans to work</td>
<td>79.14%</td>
<td>7</td>
</tr>
<tr>
<td>8. Frauds</td>
<td>78.86%</td>
<td>8</td>
</tr>
<tr>
<td>9. Company organization</td>
<td>76.57%</td>
<td>9</td>
</tr>
<tr>
<td>10. Poor communication between involved parties</td>
<td>75.43%</td>
<td>10</td>
</tr>
<tr>
<td>11. Ability to work as a team</td>
<td>75.43%</td>
<td>10</td>
</tr>
<tr>
<td>12. Ability to use computer in management</td>
<td>69.14%</td>
<td>11</td>
</tr>
</tbody>
</table>

Table (4.4) shows that the respondents group ranked “Lack of experience in the line of work." in the first position with importance index (I.I = 88 %). No wonder that the experience of work is one of the effective factors to the success and failure of projects because lack of experience of work may lead to cost overrun which resulting to coping with labors, materials, equipment and method statement of work in suitable manners so more instruction in site more time and more cost, then cost overrun and project termination.

The experience of work is important especially for directors, site engineer, estimator, labors, supervision engineer about contracts, plans, specifications, site, regulations, materials and markets because they are the main elements to make work continue in the site. So it is not strange to take the highest value in its group. This findings are supported by Kartam (2001) and Al-Hallaq, (2003).

As shown in Table (4.4) the respondents ranked “Inaccurate quantities." in the second position with importance index (I.I = 84 %). The accurate quantities for materials and
every thing belongs to work items is very important to estimate cost. Any defect in one it leads to cost overrun to projects because it affected the project budget, profit and quality of works. So quantity surveyors and estimators have a good experience, accurate. They also develop their skills, and know the execution methods and materials, equipment prices and rent respectively.

Table (4.4) shows that the respondents ranked “Ability to use computer in management” in the last position with importance index (I.I = 69.14 %). Computers used in construction management work is very beneficial because it save effort and time, more accurate and fast. But in Gaza Strip the ability to use computers in management is not important because most of works in companies can be done without the use of computers and they use models for reports, check list, material delivery, …etc. But some institutions and companies use computers for some work like payments, monitor cost, scheduling projects and some important reports. This result matches Al-Hallaq, (2003) and Enshassi et al., (2006).

The Table (4.4) shows that all sub-factors have high value of IIR in managerial groups located between 88.00 % and 69.14 % as listed in the Table (4.4) it is denoted to the important and vital of these sub-factors and it affected the projects termination.

4.3.2.2 Financial group
The IIR of each of the sub-factors of the financial group is presented in Table 4.5 in a descending order. Rank of each factor is also listed. Contractors bankrupting or insolvent and Lack of capital had the highest IIR respectively. While, Ability to negotiating claims with clients and Average number of full time employees had the lowest rank in the same group. This group contain 11 sub-factors affected to construction contract termination.
### Table 4.5 IIR and ranking of financial sub-factors

<table>
<thead>
<tr>
<th>Factor</th>
<th>IIR</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Contractors bankrupting or insolvent</td>
<td>90.00%</td>
<td>1</td>
</tr>
<tr>
<td>2. Lack of capital</td>
<td>86.57%</td>
<td>2</td>
</tr>
<tr>
<td>3. Low margin of profit due to competition</td>
<td>84.57%</td>
<td>3</td>
</tr>
<tr>
<td>4. Difference of local currency exchange with contract currency</td>
<td>84.57%</td>
<td>3</td>
</tr>
<tr>
<td>5. Client delay in the contractor financial payments</td>
<td>84.00%</td>
<td>4</td>
</tr>
<tr>
<td>6. Cost and time organization (cash flow and schedule)</td>
<td>77.57%</td>
<td>5</td>
</tr>
<tr>
<td>7. Evaluation of profit yearly</td>
<td>76.00%</td>
<td>6</td>
</tr>
<tr>
<td>8. Material wastages</td>
<td>73.43%</td>
<td>7</td>
</tr>
<tr>
<td>9. Increment of project size</td>
<td>68.57%</td>
<td>8</td>
</tr>
<tr>
<td>10. Ability to negotiating claims with clients</td>
<td>67.14%</td>
<td>9</td>
</tr>
<tr>
<td>11. Average number of full time employees</td>
<td>66.57%</td>
<td>10</td>
</tr>
</tbody>
</table>

Table (4.5) illustrates that the respondents ranked “Contractors bankrupting or insolvent.” in the first position with importance index (I.I = 90 %). Bankruptcy or Insolvency means that the inability to pay one's debts as they fall due. This factors it very important in any project because the contractor must have the monetary capability to starts any project to buy any things belongs to it e.g. bid documents, bonds, materials and etc.. So bankrupting make him not able to buy the materials, rent equipment, pay salary, wages of his staff and his commitment towards subcontractors, suppliers and banks like execution and maintenance bonds. Which leads to project termination. This result is supported by El Karriri et al., (2011) and Enshassi et al., (2006).

The respondents ranked “Lack of capital.” in the second position in importance index (I.I = 86.57 %). As you see the second factor also related to money. Lack of capital for contractor means buy and execute a small project with little profit, coping with staff have little experience to save and reduce cost of project and bad quality. So money is the backbone for any project execution because it means materials, equipments, experience, good profit, high quality to project findings. This result matches Al-Hallaq, (2003).

Table (4.5) shows that the respondents ranked “Average number of full time employees.” in the last position in importance index (I.I = 66.57%). The contractor is considered successful in his work if he saves it for company because contractors has full
time employees with permanent salary make the work continue with high quality because it makes them comfortable, ingeneric and active towards their work and company. In our companies in Gaza, the contractor has a main staff contain one engineer, one surveyor, one monitors or two, two or three skill labors and two or three labors in general. If work needs more employees, it attracts them with daily and monthly wages to specific period. So this factor take the lowest value in finance group from respondents. Hamdia, (2008) supported this finding.

The Table (4.5) shows all sub-factors have high value of IIR in finance groups limited between 90.00 % and 66.57% as listed in the Table (4.5). It is denoted to the important and vital of these sub-factors and it affected to project’s termination.

4.3.2.3 Political group
This group contains ten sub-factors and IIR for sub-factors are 73.71, 90.57, 89.43, 82.57, 81.71, 78.00, 76.00, 74.57, 73.43, 92.86 respectively in percentage.

The political environment includes all laws, institutions and government agencies that influence or restrict individuals or organizations in the society.

Any situation of the political risk assessment to the project should have been envisaged, evaluated and planned, the stakeholders of project have their own agenda and preferences, gives some idea of the potential political problems that may occur.

<table>
<thead>
<tr>
<th>Factor</th>
<th>IIR</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Closure</td>
<td>92.86%</td>
<td>1</td>
</tr>
<tr>
<td>2. Lack of resources</td>
<td>90.57%</td>
<td>2</td>
</tr>
<tr>
<td>3. Increment of material prices</td>
<td>89.43%</td>
<td>3</td>
</tr>
<tr>
<td>4. Difficulty to get permits</td>
<td>82.57%</td>
<td>4</td>
</tr>
<tr>
<td>5. Internal political troubles; as: rebellion, civil war, or disorder</td>
<td>81.71%</td>
<td>5</td>
</tr>
<tr>
<td>6. Lack of clear expectations</td>
<td>78.00%</td>
<td>6</td>
</tr>
<tr>
<td>7. Change in regulatory problems</td>
<td>76.00%</td>
<td>7</td>
</tr>
<tr>
<td>8. Banks policy</td>
<td>74.57%</td>
<td>8</td>
</tr>
<tr>
<td>9. World inflation</td>
<td>73.71%</td>
<td>9</td>
</tr>
<tr>
<td>10. Change in funding source</td>
<td>73.43%</td>
<td>10</td>
</tr>
</tbody>
</table>

Table 4.6 IIR and ranking of political sub-factors
Table (4.6) illustrates that the respondents ranked “Closure.” in the first position with importance index (I.I = 92.86 %). One of the important and vital things in construction industry in Gaza Strip is crossing because it is the only way to get all of construction material and equipment. Any closing for the crossing, most of construction material will not be available in the markets, which lead to termination if the period of closing is very long. To overcome this problem the contractor must store the requested material and instruments if it possible when he received the site to continue and complete the project. This finding is supported by El Karriri et al. (2011), Abu Mousa, (2005) and Al-Hallaq, (2003)

Table (4.6) shows that the respondents ranked “Lack of resources.” in the second position with importance index (I.I = 90.57 %). As discussed and explained in the previous factor of closure if it closed the construction material and equipment will not be available in the market of Gaza Strip especially it is exposed to injustice siege last five years ago. This may make some material not available and if it will found its cost will be very high. Which cause cost overrun and termination for some projects. This result matches with Abu Mousa, J. (2005) and take the fifth important factor position in Enshassi et al. (2006) from nine factors.

As shown in Table (4.6) the respondents ranked “Change in funding source.” in the last position with importance index (I.I = 73.43%). Because of unsuitable situation in Gaza Strip to closing crossing, new governments, second intifata some of donors stop their funds for projects. The owner will look for a new donors or internal funds to complete the projects or substitution the contractor for his cost overrun. So contractor ranked this factor in the last position. This result take the eighth important factor position in Dilts et al. (2006) from thirteen factors.

The Table (4.6) shows all sub-factors have high value of IIR in political groups located between 92.86 % and 73.43 % as listed in the Table (4.6) it is denoted to the important and vital of these sub-factors and it leaded to projects termination.

4.3.2.4 Environmental group

The project environmental directly affects the project and who manages it. Project is not carried out on a vacuum they are influenced a wide range of stakeholders and issues. e.g.: markets, economical cycle, regulations and others. Contractors must have a through understanding to project environmental which may be changing continually
shifting the goal posts. The IIR of each of the sub-factors of the financial group is presented in Table 4.5 in a descending order, contain 11 sub-factors affected to construction contract termination.

Table 4.7 IIR and ranking of environmental sub-factors

<table>
<thead>
<tr>
<th>Factor</th>
<th>IIR</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Working at hot (dangerous) areas</td>
<td>86.29 %</td>
<td>1</td>
</tr>
<tr>
<td>2. National slump in economy</td>
<td>82.29%</td>
<td>2</td>
</tr>
<tr>
<td>3. Change in resources (people, materials, funds)</td>
<td>79.43 %</td>
<td>3</td>
</tr>
<tr>
<td>4. Acts of God</td>
<td>74.00 %</td>
<td>4</td>
</tr>
<tr>
<td>5. Adverse climate conditions</td>
<td>73.43 %</td>
<td>5</td>
</tr>
<tr>
<td>6. Accounting and tax practices</td>
<td>71.71 %</td>
<td>6</td>
</tr>
<tr>
<td>7. Social environment</td>
<td>71.14%</td>
<td>7</td>
</tr>
<tr>
<td>8. No specialized arbitrators to help settle fast</td>
<td>66.29 %</td>
<td>8</td>
</tr>
<tr>
<td>9. Fare of project position to company</td>
<td>53.14 %</td>
<td>9</td>
</tr>
</tbody>
</table>

Table (4.7) shows that the respondents ranked “Working at hot (dangerous) areas” in the first position with importance index (I.I = 86.29 %). In Gaza strip the areas near or close to the borders are very dangerous areas because it is closed Israeli fire and repeated attacks so the work in this areas is very dangerous to director of company. one of staff could be killed, destroy, delay and break down the works and the arriving to the project became difficult and suspension in some times. The contractor may work in specified hours in the day which cause more time leads to more money and then cost overrun if the contractor doesn't take it in his mind. This finding matches with Abu Mousa, (2005).

Table (4.7) clears that the respondents ranked “National slump in economy” in the second position with importance index (I.I = 82.29 %). The economy for any country is represented the important factors to develop and progress it, the construction sector effected by the economy in direct affect because slump in economy instability in construction material and equipments, stopping the country growth and develop and fluctuation and changes in the local currency all of this things affected to works of project. It is advised in this state to avoid cost overrun and project termination the
donor must fix the cost of national currency to local currency. This finding supported by and Al-Hallaq, (2003) and take the third position when factors ranked.

Table (4.7) illustrate that the respondents ranked “Fare of project position to company” in the last position with importance index (I.I = 53.14 %). Gaza strip consider a small area comparison with other areas in world and the distance between its towns is short. But in the first half in the last decade before the Israeli width draw from Gaza the strip suffered from checkpoints spread a long Gaza main road. Which make difficult transportation for persons and materials. In the second half Gaza is freed and this factor becomes unimportant and less affected to projects works. This finding take the first position in Abu Mousa, (2005).

The Table (4.7) shows all sub-factors have high value of IIR in environmental groups squeezed between 86.29 % and 53.14 % as listed in the Table (4.7) it is denoted to the important and vital of these sub-factors and it affected to projects termination.

4.3.2.5 Project characteristics group
There are 6 sub-factors under the project characteristics group related to time, cost, place and type of project. Wrong cost estimating take the first position while change in the type of work take the lowest value.

Expansion projects cause a variety of changes, all of which present different managerial, legal, and financial challenges. Expansion means that new employees will be hired who will be looking to the top management of the company for leadership, additional capital will be required, creating new responsibilities to shareholders, investors, and institutional lenders.
Table 4.8 IIR and ranking of project characteristics sub-factors

<table>
<thead>
<tr>
<th>Factor</th>
<th>IIR</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Wrong cost estimation</td>
<td>88.00%</td>
<td>1</td>
</tr>
<tr>
<td>2. Increase number of projects</td>
<td>76.57%</td>
<td>2</td>
</tr>
<tr>
<td>3. Quality of work</td>
<td>76.29%</td>
<td>3</td>
</tr>
<tr>
<td>4. Life cycle period</td>
<td>75.43%</td>
<td>4</td>
</tr>
<tr>
<td>5. Wrong estimation for the total time of the</td>
<td>74.86%</td>
<td>5</td>
</tr>
<tr>
<td>project</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Size &amp; value</td>
<td>72.00%</td>
<td>6</td>
</tr>
<tr>
<td>7. Change in overall project complexity</td>
<td>71.71%</td>
<td>7</td>
</tr>
<tr>
<td>8. Project position</td>
<td>65.43%</td>
<td>8</td>
</tr>
<tr>
<td>9. Change in the type of work</td>
<td>65.43%</td>
<td>9</td>
</tr>
</tbody>
</table>

As shown in Table (4.8) the respondents ranked “Wrong cost estimation” in the first position with importance index (I.I = 88.00 %).

The preparation of cost estimations is one of the most important activities in construction. Since estimates are made at the beginning of projects, they are based on incomplete information. Most of construction companies don't have the suitable ways to make estimating to their projects in correct manner. So before the contractor makes any estimation, he must read contract documents very well, and know about construction techniques, and be familiar with typical job conditions, construction products, fluctuation and changes in the local currency etc.. And to make a correct cost estimation you must estimate the direct field cost, the field indirect cost, the office costs and the profit and contingency. Any mistake, the project would suffer throughout the duration due to the lack of funding or companies may go bankrupt or project termination. The result take the sixth important factor position in El Karriri et al. (2011) (2006) from sixteen factors.

Table (4.8) clears that the respondents ranked “Increase number of projects” in the second position with importance index (I.I = 76.57 %). Increase number of project isn’t a healthy case for company if the contractor can't coordinate among these projects because he scattered work and money, brings unskilled labors and staff to complete the shortage of his staff to work in projects, which leads to increase the period of work, increase work repeating, increase overheads to projects and bad quality. So the suitable
number of projects to company capability is useful to production, progress of work with experience to staff and best quality. This factor has the fourth value Al-Hallaq, (2003).

The respondents ranked “Change in the type of work ” in the last position with importance index (I.I = 65.43 %). The type of work in Gaza Strip doesn’t influence to companies because most projects in Gaza isn’t very difficult and complex. They are of four types of projects which are building, roads, sewage and water, and electro mechanic and rarely you find projects different to these types. So various of projects with skill contractor staff don’t influence by quality and project progress and termination. This factors has the third value in Enshassi et al. (2006).

The Table (4.8) shows all sub-factors have high value of IIR in project characteristics groups limited between 88.00 % and 65.43 % as listed in the Table (4.8) it is denoted to the importance of these sub-factors and it leads to projects termination.

### 4.4 The highest ten factors causes contracts termination

Table 4.9 IIR, ranking and groups of highest ten factors causes contracts termination

<table>
<thead>
<tr>
<th>Factor</th>
<th>Group</th>
<th>IIR</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.Closure</td>
<td>Political</td>
<td>92.86 %</td>
<td>1</td>
</tr>
<tr>
<td>2.Lack of resources</td>
<td>Political</td>
<td>90.57%</td>
<td>2</td>
</tr>
<tr>
<td>3.Contractors bankrupting or insolvent</td>
<td>Financial</td>
<td>90.00%</td>
<td>3</td>
</tr>
<tr>
<td>4.Increment of material prices</td>
<td>Political</td>
<td>89.43%</td>
<td>4</td>
</tr>
<tr>
<td>5.Lack of experience in the line of work</td>
<td>Managerial</td>
<td>88.00%</td>
<td>5</td>
</tr>
<tr>
<td>6.Wrong cost estimation</td>
<td>project charact.</td>
<td>88.00%</td>
<td>5</td>
</tr>
<tr>
<td>7.Lack of capital</td>
<td>Financial</td>
<td>86.57%</td>
<td>6</td>
</tr>
<tr>
<td>8.Working at hot (dangerous) areas</td>
<td>Environmental</td>
<td>86.29%</td>
<td>7</td>
</tr>
<tr>
<td>9.Low margin of profit due to competition</td>
<td>Financial</td>
<td>84.57%</td>
<td>8</td>
</tr>
<tr>
<td>10.Difference of local currency exchange with contract currency</td>
<td>Financial</td>
<td>84.57%</td>
<td>8</td>
</tr>
</tbody>
</table>

Table 4.9 illustrates that the highest ten factors cause project termination from 51 sub-factors listed under five main groups, which are ranked according to their severity of causing project termination.
40% of the highest causes are listed under the financial group, while 30% of them are listed under the political group. And also illustrate that the highest factors is " closure " with IIR= 92.86 % that means construction material and equipments are not available in the markets which leads to project termination if the period of closure is long. In the second is lack of resources with IIR= 90.57 % while the contractors bankrupting or insolvent was the third critical factor with IIR= 90.00%. and the last three critical factors are working at hot (dangerous) areas, low margin of profit due to competition and difference of local currency exchange with contract currency respectively.

4.5 The relationship among the highest important factors, main groups and some items

Kurskal Wallis test (A non-parametric test used to compare three or more independent groups of sampled data) is used to check the relationship among the highest important factors, main groups and some items.

If the P-value is less than 0.05 there are a relationship between them and if it more than 0.05 there are not relationship between them.

1. The relationship among the highest important factors, main groups and company years of experience.

Table 4.10 The relationship between the main groups and the company experience

<table>
<thead>
<tr>
<th>No. groups</th>
<th>No. of Items</th>
<th>P-value</th>
<th>Significant or Not</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Political Factors</td>
<td>12</td>
<td>0.285</td>
<td>Not</td>
</tr>
<tr>
<td>2 Managerial Factors</td>
<td>11</td>
<td>0.821</td>
<td>Not</td>
</tr>
<tr>
<td>3 Financial Factors</td>
<td>10</td>
<td>0.371</td>
<td>Not</td>
</tr>
<tr>
<td>4 Project Characteristic Factors</td>
<td>9</td>
<td>0.349</td>
<td>Not</td>
</tr>
<tr>
<td>5 Environmental Factors</td>
<td>9</td>
<td>0.697</td>
<td>Not</td>
</tr>
</tbody>
</table>
Table 4.11 The relationship between the highest important factors and the company years of experience.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Group</th>
<th>P-value</th>
<th>Significant or Not</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Closure</td>
<td>Political</td>
<td>0.217</td>
<td>Not</td>
</tr>
<tr>
<td>2. Lack of resources</td>
<td>Political</td>
<td>0.096</td>
<td>Not</td>
</tr>
<tr>
<td>3. Contractors bankrupting or insolvent</td>
<td>Financial</td>
<td>0.698</td>
<td>Not</td>
</tr>
<tr>
<td>4. Increment of material prices</td>
<td>Political</td>
<td>0.242</td>
<td>Not</td>
</tr>
<tr>
<td>5. Lack of experience in the line of work</td>
<td>Managerial</td>
<td>0.694</td>
<td>Not</td>
</tr>
<tr>
<td>6. Wrong cost estimation</td>
<td>project charact.</td>
<td>0.117</td>
<td>Not</td>
</tr>
<tr>
<td>7. Lack of capital</td>
<td>Financial</td>
<td>0.447</td>
<td>Not</td>
</tr>
<tr>
<td>8. Working at hot (dangerous) areas</td>
<td>Environmental</td>
<td>0.100</td>
<td>Not</td>
</tr>
<tr>
<td>9. Low margin of profit due to competition</td>
<td>Financial</td>
<td>0.115</td>
<td>Not</td>
</tr>
<tr>
<td>10. Difference of local currency exchange with contract currency</td>
<td>Financial</td>
<td>0.759</td>
<td>Not</td>
</tr>
</tbody>
</table>

There is no relationship between the company years of experience and the main groups and most important factors as illustrate in tables 4.10 and 4.11.

Due to the changing political situation in Gaza Strip in this period, Most of the company need renewable information and data. These companies uses employees of their own e.g. engineers, project mangers, etc. to overcome such circumstances.

2. The relationship among the highest important factors, main groups and projects volume.

Table 4.12 The relationship between the main groups and the projects volume

<table>
<thead>
<tr>
<th>No. groups</th>
<th>No. of Items</th>
<th>P-value</th>
<th>Significant or Not</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Political Factors</td>
<td>12</td>
<td>0.476</td>
<td>Not</td>
</tr>
<tr>
<td>2 Managerial Factors</td>
<td>11</td>
<td>0.198</td>
<td>Not</td>
</tr>
<tr>
<td>3 Financial Factors</td>
<td>10</td>
<td>0.293</td>
<td>Not</td>
</tr>
<tr>
<td>4 Project Characteristic Factors</td>
<td>9</td>
<td>0.887</td>
<td>Not</td>
</tr>
<tr>
<td>5 Environmental Factors</td>
<td>9</td>
<td>0.423</td>
<td>Not</td>
</tr>
</tbody>
</table>

78
Table 4.13 The relationship between the highest important factors and the projects volume

<table>
<thead>
<tr>
<th>Factor</th>
<th>Group</th>
<th>P-value</th>
<th>Significant or Not</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Closure</td>
<td>Political</td>
<td>0.370</td>
<td>Not</td>
</tr>
<tr>
<td>2. Lack of resources</td>
<td>Political</td>
<td>0.295</td>
<td>Not</td>
</tr>
<tr>
<td>3. Contractors bankrupting or insolvent</td>
<td>Financial</td>
<td>0.102</td>
<td>Not</td>
</tr>
<tr>
<td>4. Increment of material prices</td>
<td>Political</td>
<td>0.704</td>
<td>Not</td>
</tr>
<tr>
<td>5. Lack of experience in the line of work</td>
<td>Managerial</td>
<td>0.223</td>
<td>Not</td>
</tr>
<tr>
<td>6. Wrong cost estimation</td>
<td>project charact.</td>
<td>0.028</td>
<td>Significant</td>
</tr>
<tr>
<td>7. Lack of capital</td>
<td>Financial</td>
<td>0.495</td>
<td>Not</td>
</tr>
<tr>
<td>8. Working at hot (dangerous) areas</td>
<td>Environmental</td>
<td>0.759</td>
<td>Not</td>
</tr>
<tr>
<td>9. Low margin of profit due to competition</td>
<td>Financial</td>
<td>0.607</td>
<td>Not</td>
</tr>
<tr>
<td>10. Difference of local currency exchange</td>
<td>Financial</td>
<td>0.004</td>
<td>Significant</td>
</tr>
</tbody>
</table>

As shown in tables 4.12 and 4.13 there is no relationship between the company volume and the main groups and most important factors. Because of most of construction companies in Gaza Strip are small size, a lot of companies execute small and local projects. Therefore, Two factors had relationships. First, cost estimation which leads to project termination if it isn't taken properly (To consider material price, overhead, profit and risk factors). Secondly difference of local currency exchange with contract currency which is very important because most of the projects were funded from abroad and there is a big difference between local and foreign currencies sometimes occurs because of unsuitable political situation.
3. The relationship among the highest important factors, main groups and number of contracts termination.

Table 4.14 The relationship between the main groups and the number of contracts termination

<table>
<thead>
<tr>
<th>No. groups</th>
<th>No. of Items</th>
<th>P-value</th>
<th>Significant or Not</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Political Factors</td>
<td>12</td>
<td>0.180</td>
<td>Not</td>
</tr>
<tr>
<td>2 Managerial Factors</td>
<td>11</td>
<td>0.300</td>
<td>Not</td>
</tr>
<tr>
<td>3 Financial Factors</td>
<td>10</td>
<td>0.809</td>
<td>Not</td>
</tr>
<tr>
<td>4 Project Characteristic Factors</td>
<td>9</td>
<td>0.592</td>
<td>Not</td>
</tr>
<tr>
<td>5 Environmental Factors</td>
<td>9</td>
<td>0.498</td>
<td>Not</td>
</tr>
</tbody>
</table>

Table 4.15 The relationship between the highest important factors and the number of contracts termination

<table>
<thead>
<tr>
<th>Factor</th>
<th>Group</th>
<th>P-value</th>
<th>Significant or Not</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.Closure</td>
<td>Political</td>
<td>0.090</td>
<td>Not</td>
</tr>
<tr>
<td>2.Lack of resources</td>
<td>Political</td>
<td>0.230</td>
<td>Not</td>
</tr>
<tr>
<td>3.Contractors bankrupting or insolvent</td>
<td>Financial</td>
<td>0.686</td>
<td>Not</td>
</tr>
<tr>
<td>4.Increment of material prices</td>
<td>Political</td>
<td>0.499</td>
<td>Not</td>
</tr>
<tr>
<td>5.Lack of experience in the line of work</td>
<td>Managerial</td>
<td>0.721</td>
<td>Not</td>
</tr>
<tr>
<td>6.Wrong cost estimation</td>
<td>project charact.</td>
<td>0.601</td>
<td>Not</td>
</tr>
<tr>
<td>7.Lack of capital</td>
<td>Financial</td>
<td>0.753</td>
<td>Not</td>
</tr>
<tr>
<td>8.Working at hot (dangerous) areas</td>
<td>Environmental</td>
<td>0.451</td>
<td>Not</td>
</tr>
<tr>
<td>9.Low margin of profit due to competition</td>
<td>Financial</td>
<td>0.522</td>
<td>Not</td>
</tr>
<tr>
<td>10.Difference of local currency exchange with contract currency</td>
<td>Financial</td>
<td>0.627</td>
<td>Not</td>
</tr>
</tbody>
</table>

There were not a lot of projects in this period because of the events occurred in Gaza Strip like intifada, closure, civil war and others and little projects is awarded to most companies, Therefore, There is no relationship between the number of project expose
to unnatural termination and the main groups and most important factors as shown in tables 4.14 and 4.15.

4. The relationship among the highest important factors, main groups and satisfaction of the administrative level.

Table 4.16 The relationship between the main groups and satisfaction of the administrative level

<table>
<thead>
<tr>
<th>No. groups</th>
<th>No. of Items</th>
<th>P-value</th>
<th>Significant or Not</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Political Factors</td>
<td>12</td>
<td>0.226</td>
<td>Not</td>
</tr>
<tr>
<td>2 Managerial Factors</td>
<td>11</td>
<td>0.276</td>
<td>Not</td>
</tr>
<tr>
<td>3 Financial Factors</td>
<td>10</td>
<td>0.362</td>
<td>Not</td>
</tr>
<tr>
<td>4 Project Characteristic Factors</td>
<td>9</td>
<td>0.376</td>
<td>Not</td>
</tr>
<tr>
<td>5 Environmental Factors</td>
<td>9</td>
<td>0.780</td>
<td>Not</td>
</tr>
</tbody>
</table>

Table 4.17 The relationship between the highest important factors and satisfaction of the administrative level

<table>
<thead>
<tr>
<th>Factor</th>
<th>Group</th>
<th>P-value</th>
<th>Significant or Not</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.Closure</td>
<td>Political</td>
<td>0.947</td>
<td>Not</td>
</tr>
<tr>
<td>2.Lack of resources</td>
<td>Political</td>
<td>0.895</td>
<td>Not</td>
</tr>
<tr>
<td>3.Contractors bankrupting or insolvent</td>
<td>Financial</td>
<td>0.340</td>
<td>Not</td>
</tr>
<tr>
<td>4.Increment of material prices</td>
<td>Political</td>
<td>0.316</td>
<td>Not</td>
</tr>
<tr>
<td>5.Lack of experience in the line of work</td>
<td>Managerial</td>
<td>0.247</td>
<td>Not</td>
</tr>
<tr>
<td>6.Wrong cost estimation</td>
<td>project charact.</td>
<td>0.829</td>
<td>Not</td>
</tr>
<tr>
<td>7.Lack of capital</td>
<td>Financial</td>
<td>0.055</td>
<td>Not</td>
</tr>
<tr>
<td>8.Working at hot (dangerous) areas</td>
<td>Environmental</td>
<td>0.146</td>
<td>Not</td>
</tr>
<tr>
<td>9.Low margin of profit due to competition</td>
<td>Financial</td>
<td>0.131</td>
<td>Not</td>
</tr>
<tr>
<td>10.Difference of local currency exchange with contract currency</td>
<td>Financial</td>
<td>0.636</td>
<td>Not</td>
</tr>
</tbody>
</table>
Tables 4.16 and 4.17 show there is no relationship between the satisfaction of the administrative level and the main groups and most important factors. That most of the companies in Gaza Strip are small, local and need simple administration skills. Therefore, it is very easy to control their activities and employees and solve their problem easily and fast.

5. The relationship among the highest important factors, main groups and who has the final decision

Table 4.18 The relationship between the main groups and who has the final decision

<table>
<thead>
<tr>
<th>No. of groups</th>
<th>No. of Items</th>
<th>P-value</th>
<th>Significant or Not</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Political Factors</td>
<td>12</td>
<td>0.086</td>
<td>Not</td>
</tr>
<tr>
<td>2 Managerial Factors</td>
<td>11</td>
<td>0.138</td>
<td>Not</td>
</tr>
<tr>
<td>3 Financial Factors</td>
<td>10</td>
<td>0.180</td>
<td>Not</td>
</tr>
<tr>
<td>4 Project Characteristic Factors</td>
<td>9</td>
<td>0.126</td>
<td>Not</td>
</tr>
<tr>
<td>5 Environmental Factors</td>
<td>9</td>
<td>0.299</td>
<td>Not</td>
</tr>
</tbody>
</table>

Table 4.19 The relationship between the highest important factors and who has the final decision

<table>
<thead>
<tr>
<th>Factor</th>
<th>Group</th>
<th>P-value</th>
<th>Significant or Not</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Closure</td>
<td>Political</td>
<td>0.638</td>
<td>Not</td>
</tr>
<tr>
<td>2 Lack of resources</td>
<td>Political</td>
<td>0.933</td>
<td>Not</td>
</tr>
<tr>
<td>3 Contractors bankrupting or insolvent</td>
<td>Financial</td>
<td>0.243</td>
<td>Not</td>
</tr>
<tr>
<td>4 Increment of material prices</td>
<td>Political</td>
<td>0.051</td>
<td>Not</td>
</tr>
<tr>
<td>5 Lack of experience in the line of work</td>
<td>Managerial</td>
<td>0.815</td>
<td>Not</td>
</tr>
<tr>
<td>6 Wrong cost estimation</td>
<td>project charact.</td>
<td>0.254</td>
<td>Not</td>
</tr>
<tr>
<td>7 Lack of capital</td>
<td>Financial</td>
<td>0.258</td>
<td>Not</td>
</tr>
<tr>
<td>8 Working at hot (dangerous) areas</td>
<td>Environmental</td>
<td>0.980</td>
<td>Not</td>
</tr>
<tr>
<td>9 Low margin of profit due to competition</td>
<td>Financial</td>
<td>0.809</td>
<td>Not</td>
</tr>
<tr>
<td>10 Difference of local currency exchange with contract currency</td>
<td>Financial</td>
<td>0.389</td>
<td>Not</td>
</tr>
</tbody>
</table>
In most of the construction companies the final decision goes back to the directors as mention before, Therefore, he always thinks very deeply in any decision in order not to affect his company because of wrong decisions. So there is no relationship between who has final decision and the main groups and most important factors as clear in tables 4.18 and 4.19.

**4.6 The situation of contracts termination in Gaza Strip**

The construction industry is an important part of the national and state economies. In order to continue to be a successful part of that economy, owners and contractors must have a clearer understanding of their rights, duties and obligations to each other now and for future projects (Wittbrodt et al., 2009).

The construction contracting business has the second highest failure rate of any business, exceeded only by restaurants (Clough and Sears as cited Enshassi et al., 2006).

The results of the study of the situation of construction contracts termination in Gaza Strip in the last ten years are: Most of our companies work in several types of works like building, roads and sewage and water, with classification degree first or second, their experience more than ten years, the average volume of executed projects annually is located between 1 to 2 million dollars, the number of permanent employees in the companies located between 10 to 15 or less than ten, (86%) of companies exposed to construction contract termination and the number of contracts terminated are located between 1 to 3 contracts, most of the (62%) refer to the termination to the donors and they solve the dispute resulting from contracts termination by negotiation, most of companies make documentation for problems which face it to benefit from it in the future, (92%) of employees satisfied or very satisfied about the administrative level in their companies, the person who has the final decision in the company is directors (73.97%) especially in the finical issues and the project mangers or site engineers in managerial issues. The most critical factors causes project termination in Gaza Strip are closure, lack of resources, contractors bankrupting or insolvent, increment of material prices, lack of experience in the line of work, wrong cost estimation, lack of capital, working at hot (dangerous) areas, low margin of profit due to competition and difference of local currency exchange with contract currency.
Chapter 5

Conclusion and Recommendations

This chapter includes the conclusions, practical recommendations that may prevent or even reduce construction contracts termination, and proposed additional studies in the subject in the future.

5.1 Conclusion

Most of construction companies work in several types of works like building, roads and sewage and water, with classification degree first or second. Their experience more than ten years, the average volume of executed project in annually is located between 1 to 2 million dollars. The number of permanent employees in the companies located between 10 to 15 or less than ten.

Around 86% of companies exposed to construction contract termination and the number of contracts terminated are located between 1 to 3 contracts. Most of the contracts termination (62%) refer to the donors. Negotiation is method to solve the resulting dispute from contracts termination. Most of companies make documentation for problems which used to proof their rights.

92% of employees were satisfied or very satisfied about the administrative level in their companies. The person who have the final decision in the company is directors (74%) especially in the financial issue and the project managers or site engineer in managerial issues.

The most important factors causes project termination are:

- Closure;
- Lack of resources;
- Contractors bankrupting or insolvent;
- Increment of material prices;
- Lack of experience in the line of work;
- Wrong cost estimation;
- Lack of capital;
- Working at hot (dangerous) areas;
- Low margin of profit due to competition;
• Difference of local currency exchange with contract currency.

40% of the most important factors affecting the construction contracts termination are related to financial issue while 30% of the most important factors are related to political issue.

The findings obtained from correlation test between groups and the mean is a strong positive relationship. It can be said that the groups are consistent, valid, reliable to measure.

The test mad to find relationships between the company independent factors and termination that there is a significant relation between wrong cost estimation and the project volume and difference of local currency exchange with contract currency and the project volume.

5.2 Recommendations

a. For Government

1. The government must take the risk when the Donors delay the dibs of the contractors and try to save a new resource or internal fund.

2. The government have award contracts to the most suitable estimated cost and not necessarily to the lowest bidder.

3. The government is recommended to connect the contract price with index because of changeable political conditions.

4. The contract clauses should be modified and improved to meet the impact of closure and siege of Gaza Strip and not to allocate the whole impacts on the contracting companies. These contracts are supposed to make companies make profits.

5. The government and donors must coordinate and cooperate with contractors. In addition, they must support contracting sector as a fundamental component of Palestinian economy.
b. For Contractors Union
1. The contractors union should conduct continuous training programs with co-operation with the Islamic University to improve managerial and financial practices to explain the internal and external factors affecting the construction industry.

2. The contractors union should be defend the interests and good the PCU members, maintain the tradition and honor related to practicing construction contracting profession and assist in solving the disputes arising between and among members and others.

3. The contractors union should clarify the rights of for PCU members, regulations and laws related to construction industry when they exposed to contracts termination.

c. For Contractors
1. Top management must positively react to changes of managerial and financial polices.

2. Contractors are recommended to have qualified and quantified technical staff with appropriate experience of the project in order to be able to follow the different technical and managerial aspects of the project. The staff will be more effective if it is consisted of enough numbers of engineers, technicians, and foremen, so the responsibilities would be shared between all of them.

3. Documentation works should be applied widely in the industry. In addition, contractors are requested to keep computerized historical data of finished projects. This may help in rights reservation and to be an information source for future comparison.

4. The contracting companies should prepare effective cost estimate and should not look to increase the number of projects that cannot be controlled by its staff.

5. The contracting companies should be more interested with conformance to project contract, specification, drawings and others to overcome disputes, time, cost and quality problems.
5.3 Proposed further studies

1. The factors affecting the construction contracts termination studied from contractor ‘s respective only. So it is important to repeat this study and take and add owner and donor respective and comparison among them.

2. This study was conducted during the ongoing siege Gaza Strip. It is better to repeat this study in usual environment to compare to what extent the impact of siege has on contractors.

3. It is necessary to repeat this research every 5 years to observe the new trends of contractors.

4. There is a need to model and modeling applications of the causes of construction contracts termination that help in termination prediction.
References


Article, Coping With Termination, (2008), Master builder, UAE construction scene, pp 76-78.
Anderson, L. (2010), The top three causes of project failure, LMN consulting group Inc.


Bassenhiem, O. (2009), Project management, Free ebook.


Bunni, N. (2000), Recent developments in dispute resolution under the FIDIC Contracts, First International Conference on Engineering Arbitration, Bahrain.


Kwakye, A. (2008), Construction project administrative in practice, New York, USA.


Reddy, G., Andrew, T. (2005), Construction project failures: Towards systems thinking strategies for Improving the construction delivery process, Durban Institute of Technology and University of Johannesburg.

Reed, B. (2001), Making things happen (better) with project management, May/Jun 2001 issue, 21, 3, [Electronic], pp 42-46.


Samuels, B. (1996), construction law, Attorney-at-law(Colorado), Barrister and Solicitor (British Columbia), Long man, USA.


Statistical Package for Social Sciences (SPSS)

Shoman, Y. (2009), Measuring the efficiency of construction companies in Gaza Strip, MSc. Dissertation. Islamic University of Gaza Strip.

Sowards D. (2005), The value of post project reviews, Contractor, p35.


Termination, Texas Administrative Code §113.9(d) 1.


Whitten, N. (2003), From Good to Great, PM Network, October 2003 issue, [Electronic].

Wittbrodt R., Eaton L. (2009), Project suspension: What owners & contractors need to know - now, Id. at 464-65., California.


Yates, David (2003), Can claims and disputes (in construction contracts) be prevented or reduced?, Building Journal, Hongkong China.

Yi, H., Zhao, Y., Qi, J. (2006), Failure factors in Chinese construction enterprises Business and management, School of Business Administration, North China Electric Power Univ., Beijing, China.


Annex 1

بسم الله الرحمن الرحيم

الجامعة الإسلامية – غزة
قسم الهندسة المدنية
إدارة المشروعات الهندسية

إستبانة

حول دراسة العوامل المؤثرة على إنهاء العقود الإنشائية في قطاع غزة بشكل غير طبيعي

وذلك جزء من البحث التكميلي لنيل درجة الماجستير

في إدارة المشروعات الهندسية

الباحث / م. خليل حمدان أبو عيد
المشرف / أ. د. نبيل الصواليحي

يونيو 2011
إستبانة

 حول دراسة العوامل المؤثرة على إنهاء المشاريع الإسرائيلية في قطاع غزة بشكل غير طبيعي

 السادة المقربين المحترمون / .................................................................

 السلام عليكم ورحمة الله وبركاته

 نشكر تعاونكم ومساهماتكم في تعبئة هذا الاستبيان الذي يعتبر جزء من البحث التكميلي لنيل درجة

 الماجستير في إدارة المشروعات الهندسية . من خلال الاستبانة نرجو التعرف على العوامل المؤثرة

 على إنهاء المشاريع الإسرائيلية في قطاع غزة بشكل غير طبيعي خلال السنوات العشر الماضية.

 آملين أن ينتج عن هذه الدراسة التقليل من ظاهرة إنهاء المشاريع الإسرائيلية في قطاع غزة بشكل

 غير طبيعي والابتعاد عن مسبباتها.

 وتتكون هذه الاستبيانة من الأجزاء التالية:

 1. السيرة الذاتية للشركة.

 2. تقييم واقع إنهاء المشاريع الإسرائيلية في قطاع غزة.

 3. العوامل المؤثرة على إنهاء المشاريع الإسرائيلية في قطاع غزة بشكل غير طبيعي.

 المعلومات الواردة في الاستبيان يتم الاستفادة منها لغرض البحث العلمي فقط ولن تنقل لأي جهة

 أخرى، و يتم التعامل معها كمعلومات منفصلة عن مصدرها ولن تستخدم لأي أغراض أخر

 شاكرين لكم حسن تعاونكم ،

 الباحث / م. خليل حمدان أبو عيد
استبانة تهدف إلى دراسة العوامل المؤثرة على إنهاء المشاريع الإنشائية في قطاع غزة بشكل غير طبيعي

فقرة (أ) : معلومات عامة عن الشركة

1. اسم الشركة (اختياري):

2. نوع الأعمال التي تقوم بها الشركة :
   □ مباني
   □ مياه ومجاري
   □ كهر ومشاريع

3. درجة تصنيف الشركة حسب تصنيف اتحاد المقاولين:
   □ دورة أولى □ دورة ثانية □ دورة ثالثة

4. وظيفة من يقوم بتعبئة الاستبيان:
   □ صاحب الشركة
   □ مهندس موقع
   □ مهندس مكتب
   □ مدير مشاريع

5. عدد سنوات الخبرة لمن يقوم بتعبئة الاستبيان:
   □ من 1-3 سنوات □ من 3-5 سنوات □ من 5-10 سنوات □ أكثر من 10 سنوات

6. عدد سنوات الخبرة في مجال المقاولات للشركة:
   □ من ثلاث سنوات إلى خمس سنوات
   □ من ستة سنوات إلى خمس سنوات
   □ أكثر من عشر سنوات

7. معدل قيمة المشاريع التي يتم تنفيذها سنويا (بالدولار) :
   □ أقل من 1 مليون □ من 1 إلى 2 مليون □ من 2 إلى 3 مليون □ أكثر من 3 مليون
   □ من 10 إلى 15 □ أقل من 10 □ أكثر من 20 □ من 15 إلى 20

8. عدد العاملين الثابتين بالشركة:
فقرة (ب): تقييم واقع إنهاء المشاريع الإنسانية في قطاع غزة.

1. هل تعرضت شركتكم لإنهاء بعض المشاريع سابقا بشكل غير طبيعي؟
   - نعم
   - لا
   إذا كانت الإجابة بنعم
   
   2. ما هو عدد المشاريع التي تعرضت للإنهاء بشكل غير طبيعي سنويا؟
   - من 1-3 مشاريع
   - من 3-5 مشاريع
   - أكثر من 10 مشاريع

3. هل تتوفر لدى المؤسسة معلومات موثقة عن أسباب إنهاء المشاريع سابقة بشكل غير طبيعي؟
   - نعم، دائما
   - أحيانا
   - لا

4. هل تحاول الشركة الاستفادة من الأخطاء السابقة التي أدت لحدوث إنهاء المشاريع السابقة بشكل غير طبيعي؟
   - نعم، دائما
   - أحيانا
   - لا

5. إلى من تعزو توقف المشاريع التي تنتهي بشكل غير طبيعي؟
   - المالك.
   - المقاول.
   - الممول.
   - مدير المشروع.

6. هل تم حل النزاع الناتج عن إنهاء المشاريع عن طريق؟
   - التفاوض المباشر.
   - التفاوض عبر وسيط.
   - التحكيم.
   - المحكمة.
7. هل أنت راض عن مستوى إدارة المشاريع لدى شركتكم؟

- راض جدا
- غير راض
- محايد

8. من هو صاحب القرار النهائي في إدارة المشروع؟

- صاحب الشركة
- مدير المشروع
- مهندس الموقع
- غير ذلك، وضح...

فترة (ج): العوامل المؤثرة على إنهاء المشاريع الإنشائية في قطاع غزة بشكل غير طبيعي

في الجدول التالي هناك عدد من العوامل المهمة المؤثرة على إنهاء المشاريع الإنشائية في قطاع غزة بشكل غير طبيعي، الرجاء اختيار درجة الأهمية التي تراها مناسبة بوضع إشارةً 'P' لتعبر عن مدى الأهمية.

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<th>العوامل المؤثرة</th>
<th>درجة الأهمية</th>
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<td>سوء إدارة الموارد</td>
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<td>عوامل مالية</td>
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<td>نقص المواد من الأسواق المحلية</td>
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<td>البيئة الاجتماعية للسكان بالقرب من المشروع</td>
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<td>3.</td>
<td>النظام الضريبي في البلاد (القوانين، نظام المحاسبة الضريبية، الفاتورة الصغرية، الخ)</td>
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<td>4.</td>
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<td>6.</td>
<td>تغير في الموارد (المال والمكان والمصادر البشرية)</td>
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<td>7.</td>
<td>نقص المحكمين المحترمين في حل النزاعات الهندسية</td>
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<td>8.</td>
<td>أعمال غير متوقعة (رياح شديدة، زلزال،...)</td>
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<td>9.</td>
<td>بعد المشروع عن المقر الرئيسي للشركة</td>
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<td></td>
<td>خامسًا: عوامـل تتعلق بالمشروع</td>
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<td>1.</td>
<td>التنوع في المشاريع (مباني وطرق و...)</td>
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<td>حجم وقيمة المشروع</td>
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<td>طول فترة حياة المشروع</td>
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<td>زيادة عدد المشاريع لدى المقاول</td>
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<td>5.</td>
<td>عدم توفر فترة المشروع بشكل مناسب</td>
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<td>6.</td>
<td>مكان المشروع</td>
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<td>7.</td>
<td>التغير في تعقيدات المشروع (فنية، إدارية، ...)</td>
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<td>جودة العمل المطلوبة</td>
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<td>9.</td>
<td>عدم تسعير المشروع بشكل صحيح</td>
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</table>
Annex 2
A questionnaire aims to investigation of factors affecting on termination of construction projects in Gaza Strip

Part A : Organization Profile

1. Name of company ( Free) : --------------------------------------------------------------

2. Type of work executed by the respondents
   □ Buildings               □ Roads
   □ Sewage and Water        □ Electro mechanics

3. Classification of your company
   □ First class            □ Second class           □ Third class

4. Distribution of the respondents' occupation
   □ Director               □ Project manager
   □ Site engineer          □ Office engineer

5. Experience of the respondents
   □ From 1 to 3 years       □ More than 3 to 5 years
   □ More than 5 to 10 years □ Over 10 years

6. Years of experience in the line of work
   □ From 1 to 3 years       □ More than 3 to 5 years
   □ More than 5 to 10 years □ Over 10 years

7. Volume during the last 10 years
   □ Less than $1 million    □ From $1 to $2 million
   □ From $2 to $3 million   □ More than $3 million

8. Number of labors
   □ Less than 10           □ From 10 to less than 15
   □ From 15 to 20          □ More than 20
Part B : Evaluation the current situation in Gaza Strip

1. Is your company exposed to unnatural termination of project?
   □ Yes    □ No

   If the answer is Yes

2. Number of project expose to unnatural termination
   □ From 1 to 3    □ From 3 to 5
   □ From 5 to 10    □ More than 10

3. To whom you refer the unnatural project termination?
   □ Contractor    □ Owner
   □ Donor    □ Project manager

4. How you are solving the resulting dispute from unnatural project termination?
   □ Negotiation    □ Mediation
   □ Arbitration    □ Litigation

5. Benefits from Previous Information?
   □ Yes, always    □ Yes, sometimes    □ No

6. Records of Information for Previous Project terminated
   □ Yes, always    □ Yes, sometimes    □ No

7. Are you satisfy about the administrative level of your company?
   □ Very satisfy    □ satisfy    □ Neutral    □ Not satisfy

8. Who has the final decision in project management in your company?
   □ Director    □ Project manager    □ Site engineer    □ Others
Part C : Project termination factors ( Please tick "P" to importance degree to the following like you see )

<table>
<thead>
<tr>
<th>Item</th>
<th>High</th>
<th>Important</th>
<th>Medium</th>
<th>Low</th>
<th>Very Low</th>
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<td>1. Managerial Factors</td>
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<td>1. Lack of experience in the line of work</td>
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<td>2. Company organization</td>
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<td>3. Frauds</td>
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<td>4. Neglect</td>
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<td>5. Inaccurate quantities</td>
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<td>6. Unmanaged cash flow</td>
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<td>7. Resource management</td>
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<td>8. Poor communication between involved parties</td>
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<td>9. Ability to put plans to work</td>
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<td>10. Ability to use computer in management</td>
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<td>11. Ability to work as a team</td>
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<td>12. Unclear goals</td>
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<td>2. Financial Factors</td>
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<td>1. Low margin of profit due to competition</td>
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<td>2. Lack of capital</td>
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<td>3. Difference of local currency exchange with contract currency</td>
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<td>5. Contractors bankrupting or insolvent</td>
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<td>6. Evaluation of profit yearly</td>
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<td>7. Material wastages</td>
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<td>8. Ability to negotiating claims with clients.</td>
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<td>9. Increment of project size</td>
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<td>10. Average number of full time employees</td>
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<td>11. Cost and time organization (cash flow and schedule )</td>
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<td>3. Political Factors</td>
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<td>1. Lack of clear expectations</td>
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<td>3. Change in regulatory problems</td>
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<td>8. Difficulty to get permits</td>
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<td>10. World inflation</td>
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<td>3. Accounting and tax practices</td>
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<td>4. Working at hot (dangerous) areas</td>
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<td>5. National slump in economy</td>
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<td>6. Change in resources (people, materials, funds)</td>
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<td>7. No specialized arbitrators to help settle fast</td>
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<td>8. Acts of God</td>
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<td>9. Fare of project position to company</td>
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<th>5. Project Characteristic Factors</th>
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<td>4. Increase number of projects</td>
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<td>5. Wrong estimation for the total time of the project.</td>
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<td>6. Project position</td>
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<td>8. Quality of work</td>
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<td>9. Wrong cost estimation</td>
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