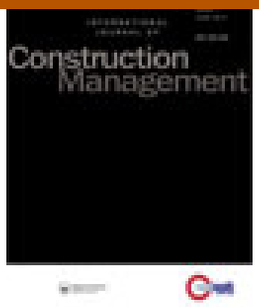

International Journal of Construction Management

ISSN: 1562-3599 (Print) 2331-2327 (Online) Journal homepage: http://www.tandfonline.com/loi/tjcm20

Contractors' Perception towards Causes of Claims in Construction Projects

Adnan Enshassi, Rafiq M. Choudhry & Said El-Ghandour

To cite this article: Adnan Enshassi, Rafiq M. Choudhry & Said El-Ghandour (2009) Contractors' Perception towards Causes of Claims in Construction Projects, International Journal of Construction Management, 9:1, 79-92, DOI: 10.1080/15623599.2009.10773123

To link to this article: http://dx.doi.org/10.1080/15623599.2009.10773123

Published online: 10 Feb 2014.

The International Journal of Construction Management (2009) 79 - 92

CONTRACTORS' PERCEPTION TOWARDS CAUSES OF CLAIMS IN CONSTRUCTION PROJECTS

Adnan ENSHASSI[1], Rafiq M. CHOUDHRY[2] and Said EL-GHANDOUR[3]

[1] Civil Engineering Department, IUG, Palestine. Email: enshassi@iugaza.edu.ps or aenshassi@gmail.com
[2] School of Civil and Environmental Engineering, National University of Sciences and Technology, Email: choudhry03@gmail.com
[3] SMDM Project, Gaza, Palestine. Email: selghandour@mail.com

Abstract
The construction industry is an important sector for the development of the Gaza Strip. A key factor to a successful construction project is to complete the project without any claims occurrence. Nonetheless, claims are very common in the construction industry of Palestine. The aim of this paper is to identify and rank the existing causes of claims according to their relative importance in the construction industry from the perspective of the local contractors. The paper reports on a questionnaire-based research investigation targeting local contractors by analyzing their perception towards causes of claims. The results found the main causes of claims and they are: awarding bid to the lower bidder; border closures; residents' interference during project implementation; road blockage and difficulties in passing between cities and governorate It was found that owners may not award the contract to the lowest responsive bidder. Owners may coordinate with the local residents of the area to inform them about the benefit of projects. Owners may assist contractors in removing obstacles of the project site to avoid delays. It is hoped that these findings will guide efforts to improve the performance of the construction industry and will be useful to international engineering and construction companies seeking a share in the Palestine and regional markets.

Keywords
Claim, Construction, Contractors, Dispute

INTRODUCTION

The construction Industry is one of the main Palestinian industries. Since the establishment of the Palestinian National Authority (PNA) in 1994, construction projects implemented by the governmental and private sectors have supported the development of numerous related industries in the local market. The construction industry's share is 33% of the total Palestine production and influences other economic, social, educational and professional sectors (PCU, 2005).

The construction industry is a major supporter of employment and contributes 10.8 % to employment directly and 30% indirectly by supporting related industries that are operating in production and services sectors. Following the breakout of the second Intifada in 2000, the construction and other majors industries have been affected negatively as a result of border closures, preventing the supply of critical materials to all industrial and commercial sectors, cities and towns. These frequent closures have badly affected the construction industry and contributed to the high rate of unemployment in Palestine (PCBS, 2006).

The local Palestinian authorities deal with funds to implement the donor's regulations which, in some cases, are difficult to be put in practice by the contractors because they are not compatible

with local construction standards. However, the construction industry has experienced major changes in its methods and procedures in recent years. Almost every aspect of the construction process has undergone extensive modifications. Nonetheless, the present construction industry is characterized by increasing number of cost claims and disputes between contractors and owners. These claims break out because of many causes including varied interpretation of contract specifications, unpredictable and uncontrollable delays, and non-performance of firms involved in the construction process. These claims and disputes over cost jeopardize a contractor's profitability and also the success of the project for the project owner (Alkalil and Alghafly, 1999; Al Moumani, 2000).

Construction claims and disputes occur in both public and privately funded projects, and in projects of small as well as large currency amounts. In fact, no project is considered safe from potential claims. These claims lead to significant financial damages. All parties including project owner, designer and contractor, therefore, need to understand the process of claim. Owners and contractors need to take steps to prevent claims from even happening. On the other hand, they also need to focus on how to manage construction claims. Thus, the claim management process in the construction industry has to be clear and be understood by all parties especially the contractor in order to know how to manage them.

In the Palestinian construction industry, claims appear to hinder the completion of construction on-site and cause delays in delivering projects. These issues lead to cost overruns of construction projects. Additionally, the number of claims has continued to increase in recent years. There is a lack of information related to the causes of construction claims in Palestine. This research, therefore, aims to identify and rank the existing causes of claims according to their relative importance in the construction industry from contractors' perspective and to suggest appropriate recommendations. Hopefully, the findings of this research will guide efforts to improve the performance of the construction industry and will be useful to international engineering and construction companies seeking a share in the Palestine and the regional markets.

COMMON CAUSES OF CONSTRUCTION CLAIMS

Occurrence of claims is common in the construction industry. Most claims are legitimate and do not create disputes and confrontation between the owner and the contractor. Claim is defined as a written demand or assertion by one of the contracting parties to seek payment of money, the adjustment, interpretation of contract terms or other relief arising or related to a given contract (Mitchell, 1998). Most of the standard forms of contract used in the building and civil engineering industry recognize the fact that when actions of the employer and his agents result in the contractor incurring additional costs, there must be an adequate contractual mechanism for reimbursing the contractor (Vidogah and Ndekugri, 1998).

In Japan, the term "claim" is used in a narrow way, mainly in relation to disputes arising over defects following the completion of construction (Iwamatsu *et al*. 2008). In Europe and North America, the meaning of the term is known to cover immediate issues for solution among the concerned parties in construction, such as proposals for design changes, requests for extension of construction time etc. (Iwamatsu *et al*. 2008). Generally, a claim is defined as the seeking of change by one of the parties involved in the construction process (Arditi and Patel, 1989). Also, claims are described as the assertion of the right to money, property or remedy (Powell and Stephenson, 1993). A construction claim may be defined as a legitimate request for additional compensation for cost and/or time on account of a change in the terms of the contract (Wideman,

1990) indeed paying attention at the time of bidding and during its execution.

Due to changes and variation orders during construction of projects, construction contracts lead to disputes and claims. It is very difficult to state expectations and requirements with precision in any construction agreement. Potential problem areas include ambiguities, omissions, conflicts, adjustment clauses, multiple prim contracts, fast-track construction and unrealistic performance time. There are a variety of different types of designers: architects, interior designers, geotechnical consultants, and engineers with diverse specialties. All these play a crucial role in minimizing and resolving disputes. Tensions arise due to the quality of stakeholders' professional performance, professional obligation to the owner and their financial interests. Potential problem areas include but are not limited to design errors, lack of design coordination, inadequate design review, construction phase services, inadequate investigation, project cost estimates, and performance specification (Bramble, 1990).

Incomplete information on drawings and design errors are leading causes of claims. Failure of the Architects and Engineers (A/E) to perform in a timely manner including improperly reviewing shop drawings, changing order approval, clarification of drawings and specifications, and correction of design errors are few examples. Additionally, a lack of design coordination and inadequate design review, manifest errors or omissions, and schedule conflicts lead to construction claims (Ahuja, 1994).

There are many acts and omissions of contractors that also lead to construction claims. These acts and omissions occur at different stages in the preparation of the project estimates and bids, evaluation of the project costs and design reviews, failure to effectively manage the construction process, lack of experience in the nature of the project, poor quality construction including labor issues and problems, equipment problems and financial problems (Bramble and Callahan, 1992). Contractors often bear the financial burden of a project's problems and at the same time they intend to seek relief through claims. A common cause of distress for contractors is unrealistic estimates of the cost of works. Generally, a low-priced bid leads to a claim mentality when the contractor attempts to mitigate loss of the anticipated costs. Poor construction quality is another common source of claims when remedial measures to defective works and workmanship increases cost and results in schedule delays (Ahuja, 1994).

Claims by owners against contractors usually concern materials out of specification or defective work. Contractors are responsible for the quality of their work as specified in the contract. Examples of owner's claims include property damage or damage to owners' installations, performing poor quality of work, and contractor's late completion when the contracts call for a completion date on the assumption that the owner is in need of the facility according to the contract date. A late finish by the contractor brings inconvenience and financial losses to the owner (Bubshait and Manzanera, 1990). Contractors, sometimes, have to face claims because of failures to employ sufficient workforce for the project, failure to provide sufficient equipment, cash flow limitations, poor workmanship, poor planning and project management issues (Riad *et al* 1991). Subcontractors are subject to the same problems which the prime contractor faces. Situations involving subcontractors for causes of construction claims relate to problems of coordination among the various trade contractors (Bramble, 1990). Lack of coordination between contractors and suppliers often creates conflicts and claims (Ahuja, 1994).

Often, the nature of the project is a source of problems that leads to construction claims mainly because of the inherent difficulties in the type of project or construction site (Bramble, 1990). Projects that are complex, large, remotely located, in congested areas, and requiring

technology at the cutting edge are subject to construction claims. Examples are nuclear power plants, process plants, unique structures, underground construction, earthwork, and renovation projects (Ahuja, 1994). Sometimes, project problems are beyond the control of any party that impact construction progress and result in construction claims. The term used for such claims is called "Force Majeure". Force Majeure contract clauses refer to occurrence of claim which is beyond the reasonable control of any party to a construction contract. These claims are also stated as "acts of God" or "Unavoidable Casualty". Nonetheless, a claim for a time extension is usually permitted due to severe weather conditions, such as floods, fires, or even sabotage and so on (Ahuja, 1994).

METHODOLOGY

This research targeted 100 contractor companies working on construction projects in the Gaza Strip. Eighty-three completed questionnaires were received. The selected contractors are classified as first, second and third class in various types of work areas by the Palestinian Contracting Union (PCU). Those contractors that are registered under the fourth and fifth classes were neglected due to the low practical and administrative experience in their construction works. The financial ceiling for projects for the 1st PCU category is USD 5 million, 2nd category is USD 2 million, 3rd category is USD 1 million, 4th category is USD 0.5 million and 5th is USD 0.25 million. The targeted 100 contractor companies have a valid registration in the PCU in the following fields: building, roads, water and sewage, electro-mechanics and public works.

In this study, statistical equations were used in order to calculate the sample size for contractors. Equation 1 was used to determine the sample size of the unlimited population (Creative Research System, 2008):

$$SS = \frac{Z^2 * P * (1 - P)}{C^2} \qquad \text{…… Equation 1}$$

Where SS = Sample size
Z = Z value (1.96 for 95% confidence level)
P = percentage picking a choice, expressed as a decimal (0.50 used for sample size needed)
C = margin of error (8%)

$$SS = \frac{1.96^2 \text{ x } 0.5 \text{ x } (1 - 0.5)}{0.08^2} = 150 \text{ contractors}$$

The correction for the finite population was calculated by using equation 2.

$$SS_{new} = \frac{SS}{1 + \frac{SS - 1}{POP}} \qquad \text{…….. Equation 2}$$

Where POP is the population = 139 match the proposed classes of the contracting companies

$$SS_{new} = \frac{150}{1 + \frac{150 - 1}{139}} = 72.3 \approx 73$$

The targeted 73 contractors were selected in accordance to equation 2.

To determine the ranking of different factors which were causing claims on construction projects, the "Relative Importance Index" (RII) was adopted, transforming the five-point Likert type scale to determine the ranking of each factor by using equation 3

$$RII = \frac{\sum_{i=1}^{5} a_i x_i}{5\ x\ N}$$

Where a_i is a constant expressing the weight of the ith response, x_i is the frequency of the ith response of the total responses for each clause, i is the response category index where i = 1, 2, 3, 4 and 5 respectively, N is the total number of respondents. RII value is ranged from 0 to 1 (Tam *et al*, 2000).

The research was carried out in the Gaza Strip, which consists of five governorates: namely 6 contractors from the north, 44 from Gaza, 10 from the middle Area, 20 from Khan-Yunis and 10 contractors from Rafah governorates were interviewed.

The survey instrument was pilot-tested to measure its validity and reliability. The pilot study was conducted by distributing the questionnaire to two panels of experts having experience in the construction field to assess the questionnaire validity and provide constructive feedback. The first panel, consisting of twenty experts (owners, consultants, contractors), was asked to verify the validity of the questionnaire content and its relevance to the research objective. The second panel, consisting of two experts in statistics, was asked to confirm that the instrument used was valid statistically, and that the questionnaire design was well enough for the purpose of this research. Experts' comments and suggestions were accordingly incorporated to ensure the validity and reliability of the questionnaire. The method utilized for this research is similar to that used by other researchers (Tam *et al*, 2000; Odeh and Battaineh, 2002).

RESULTS

The collected data from questionnaires was analyzed to find causes of claims. Causes of claims were then categorized into four groups. The first group is related to claim factors caused by owners, the second group is related to the design and bill of quantities. The third group is related to the contractual relationship factor, and the fourth group is related to emergency cases. Forty-one causes were identified and categorized into four groups through consultation with owners, contracting companies and local consultants and are discussed next:

Group 1: Causes of claims caused by owners

The contractors were asked regarding their views about the causes of claims caused by owners. Table 1 shows the statistical results including relative importance index (RII), sub-field rank and field rank as perceived by the contractors.

The result shows that the average relative index of group 1 is 0.528 with fourth position of the rank order among the four groups (Table 2). The overall relative importance index of all causes of construction claim is 0.547. The value of average relative index for the causes of claims caused by owners is less than the average value of RII. It means that claims factor caused by owners can be considered as the lowest group which causes claims on constructions projects.

Table 1 Contractors views about causes of claims caused by owners

Group 1 - Causes of claims caused by owners	RII	Sub-Field Rank	All Field Rank
Residents' interferences during project implementation caused delays in the contractor's activities	0.660	1	3
Unexpected increase in material prices	0.642	2	5
Material rejection because of unacceptable quality and specifications	0.608	3	8
Continuous verbal instructions to contractor	0.605	4	9
Site possession with obstacles (license, land occupation etc.)	0.602	5	10
Delay contractor progress payments	0.575	6	15
Cardinal changes in the quantity plus or minus	0.575	6	15
Changes in material type and specification during construction	0.572	8	17
Owners financial difficulties because of delayed release of funds from the donors	0.569	9	18
Owner's slow decisions	0.566	10	19
Poor judgment by the supervision team in estimating time and resources	0.563	11	20
The supervision team required the contractor to supply material of high standards than were specified in the contract	0.554	12	23
Changes of currency value [Index value]	0.548	13	24
Supervision team lacking in authority and showing weakness in decision making	0.515	14	26
Owner's direct interfering in project without any coordination and ignoring his supervision team	0.497	15	29
Uncooperative owner with the contractor regarding work activities and following up with the supervision team	0.458	16	34
Low quality assurance and control in the project	0.458	16	34
Poor controlling and monitoring of the owner to his supervision team	0.455	18	36
Lack of experience of the supervision team in project supervision	0.443	19	37
Lack of support of the owner to his supervision team	0.440	20	38
Adversarial relation between the contractor, the owner and the supervision team	0.416	21	39
Issues of change in site location or conditions	0.416	21	39
Project termination or suspension of some main activities during project implementation.	0.398	23	41
Average of Relative Importance Index	0.528		

Table 2 The relative index and rank of all four groups

Groups	Contractor	
	RII	Rank
1. Claims factors caused by owner	0.528	4
2. Design and bill of quantities	0.570	2
3. Contractual relationship factor	0.577	1
4. Emergency cases	0.567	3
Overall average of Relative Importance Index (RII)	**0.547**	

As shown in Table 1, the respondents ranked "the residents' interference during project implementation caused delay in the contractor activities" in the first position with a relative importance index value 0.660. This factor was ranked at 3rd position by all field ranks. It means that residents' interferences during project implementation caused delay in contractor activities, and this can be considered as the main source of claim factors in relation to owners. Most contractors agree that this issue affects their activities and led to project delays. In some cases, resident interference stopped the project implementation for a long time. The writers postulate that it is the owner's responsibility to assist the contractor on these issues so that site work can go ahead without obstruction

The respondents ranked "the unexpected increase in material prices "in the second position with RII value of 0.642. This question was ranked at the fifth position under the overall claim causes (All Field Ranks). Unexpected increase in material prices caused delay in the contractors' activities. Most contractors agreed that unexpected increase in material prices affected their activities and caused delays in site-work progress. However, contractors were not able to request the extra cost resulting from material price increase. There exists a clause in the contract at Gaza Strip that contractor would not be reimbursed for any additional cost as a result of increase in material prices. The owners are aware about material price increase problems because of border closures and they include this condition in their contract.

The respondents' ranked "material rejection because of unacceptable quality and specifications" in the third position with RII value 0.608. This question was ranked at the eighth position under the overall claim causes (All Field Ranks). This means that material rejection due to low quality and wrong specifications caused delays to contractor activities. This indicates that specifications were not comprehensible and had ambiguous provisions. The ambiguous material specifications were considered as a source of claim factor caused by owners. Most contractors agreed that these issues affected their activities on-site and caused delays in work progress as well as slowed down their performance. In most cases, contractors were not able to request for extra cost and time which was needed due to delays caused because of material rejection. Unavailability of proper construction material because of border closures was also a concern expressed by the contractors.

The respondents ranked "continuous verbal instructions to contractor" in the fourth position with RII value of 0.605. This question was ranked at the ninth position under the overall claim causes (All Field Ranks). This indicates that continuous verbal instructions to contractors were considered a source of claim factors caused by owners. Contractors agreed that these issues affected their activities and caused delays in their work performance. It was found that the contractor was instructed by owner's manager to start new activities without preparation which then caused delays in the project performance. These issues created disagreement between the parties i.e. the contractor, engineer and owner.

The respondents ranked "site possession with obstacles" in the fifth position with RII value of 0.602; while this question was ranked at the tenth position under the overall claim causes (All Field Ranks). The result indicates that the possession of site with obstacles was a source of claim factors caused by owners. Most contractors agreed that these issues affected their work activities and caused delays in work progress. Possession of the site was found as one of the major concerns of all contractors. The owner needs to act responsibly to ensure that all land obstacles are removed before starting project activities. Nevertheless, often the owners failed to remove site obstacles mainly due to weakness in law enforcements. These obstacles caused delays to the contractor activities which then led to claims.

The respondents ranked "adversarial relation between the contractor, owner and the supervision team" in the twentyfirst position with RII value of 0.416; while this question was ranked at the thirtyninth position under the overall claim causes. The respondents ranked this factor the lowest. This result indicates that the contractor prefers to have good relations with the owner and the supervision team instead of adversarial relations.

The respondents' ranked "change in site location or conditions" in the twentyfirst position with RII value of 0.416. This factor was ranked at the thirtyninth position under the overall claim causes. This result indicates that 'change in the site location and conditions' factor has the lowest affect on leading to claims. If the owner changes project site location under any circumstances after the contract is signed with the contractor, it will result in changing project conditions and create problems for the contractor.

In the last question, the contractors respondents ranked "project termination or suspension of some main activities during project implementation" in the twentythird position with RII value of 0.398; while this factor was ranked at the fortyfirst position under the overall claim causes. It is concluded that this factor was less effective in increasing claims on construction projects.

Group 2: Design and bill of quantities

The contractors were asked concerning their perceptions regarding claims resulting from the design and bill of quantities. Table 3 shows the statistical results including relative importance index (RII), sub-field rank and field rank as perceived by the contractors' respondents.

Table 3 Contractors views concerning design and bill of quantities

Group 2- Design and Bill of Quantity	RII	Subfield Rank	All Field Rank
Different description of the item in the bill of quantities than what was mentioned in the specifications	0.623	1	6
Drawings and bill of quantities are not fitting the construction site	0.602	2	10
Ambiguous and incomplete drawings and bill of quantities	0.599	3	12
Cardinal changes or modifying design during construction	0.596	4	13
Using over quality specifications or international specifications, which are not available in the local market	0.530	5	25
Over design	0.467	6	33
Average of Relative Importance Index	0.569		

Table 3 shows that the average RII of this group is 0.569 with second position of the rank order among the four groups (Table 2). The average RII of the over all construction claim causes was 0.547. The value of average relative index for the causes of claims caused by design and bill of quantities is higher than the average value of RII. This means that claims factor caused by design and bill of quantities can be considered as the high group which causes claims on construction projects.

The respondents ranked "different description of the item in the bill of quantities than what was mentioned in the specifications" in the first position with RII value of 0.632. In the overall field rank, this factor was ranked at sixth position. This means that this factor "different description of an item in the bill of quantities than what was in the specification" was considered the main

source of claims. Most contractors agreed that this issue affected their activities and caused delays in their work progress. The contractors expressed their concerns that during project implantation, the owner's supervision team sometimes rejected materials because it was not in accordance with specification requirements. Consequently, this issue showed the way to conflicts between the contracting parties.

The respondents ranked "drawings and bill of quantities are not fitting the construction site" as the second most important factor with RII value of 0.602. In the overall claim causes (all field ranks), this factor was ranked at tenth position. This result indicated that 'drawings and bill of quantities were not fitting with the construction site' and delays occurred in the contractor activities. Most contractors agreed that these issues were affected their activities and caused delays in their site work performance. In most cases, contractors requested owners' supervision team to clarify and provide accurate drawings. Nevertheless, these issues caused delays and reduced productivity on-site. Contractors were claiming compensation for the extra cost resulting from changes in design.

The respondents' ranked "ambiguous and incomplete drawings and bill of quantities" as the third most important cause factor with RII value of 0.599. In the overall claim causes (all field ranks), this factor was ranked in the twelfth position. This means that ambiguous and incomplete drawings and bill of quantities caused delays in contractor activities. The contractors perceived that this factor had resulted in loss of profit margin mainly because of delays. In relation to drawings, this factor sometimes led to misunderstanding between the contractor and the owner's representative. Ambiguous and incomplete drawings led to reduction or increase in quantities and costs in the bill of quantities, which then ended in conflict between the contracting parties.

The respondents' ranked "cardinal changes or modifying design during construction" as the fourth most important cause factor with RII value of 0.596. In the overall claim causes (all field ranks), this factor was ranked in the thirteenth position. This means that "cardinal changes and modifying design during construction" was considered as one of the main source of claims factors. The contractors agreed that these issues negatively affected their activities and caused delays in work progress. Because of fundamental changes and modifying the design, the contractor was asked to execute activities as instructed by the owner's representative consequently resulting in delays. These issues created conflicts between the parties when the contractor was preparing to submit claims.

The respondents ranked "using over quality specification or international specification that are not available in the local market" as the fifth cause factor with RII value of 0.530. In the overall claim causes (all field ranks), this factor was ranked in the twentyfifth position. This means that respondents agreed that this factor was not serious in determining claim issues. Almost all public projects were being built by incorporating some typical design and employing local consultants (designer). The respondents perceived that typical designs are in accordance with local conditions.

The respondents' ranked "over design" as the sixth cause factor with RII value of 0.467. In the overall claim causes (all field ranks), this factor was ranked in the 33rd position. This result indicates that this factor was considered as the lowest factor in this field. The respondents perceived that over design in public projects was not a big issue because the owner, after all, has to bear the costs of over design.

Group 3: Contractual relationship factor

The respondents were asked to give their views about claims caused because of contractual relationship factor group. Table 4 shows the statistical results including relative importance index (RII), sub-field rank and field rank as perceived by the respondents.

Table 4 Contractors views about contractual relationship factor

Group 3- Contractual relationship factor	RII	Sub field Rank	All Field Rank
Awarding bid to the lowest bidder	0.744	1	1
Payment requests are not entertained within the stipulated time period	0.617	2	7
Awarding process took longer period after the bid opening	0.593	3	14
Poor contract management and ambiguities	0.563	4	20
Different type of contracts	0.560	5	22
Interpreting items in the contract with no reference to the Palestine law	0.485	6	30
Changes in the legislation and processes (for example tax free commodities or changes in the tax rate)	0.476	7	32
Average of Relative Importance Index	0.577		

Table 4 gives the average RII of this group which is 0.577. This group was ranked at the first position among the four groups (Table 2). The average RII of the overall construction claim causes (all field ranks) was 0.547. Thus, the value of average relative index for the causes of claims caused by contractual relationship factor group is higher than the average value of RII. The result of Table 4 indicates that claims factor caused by contractual relationship factors was considered as the high group which caused claims on constructions projects.

The respondents' ranked "awarding bid to the lowest bidder "in the first position with RII value of 0.744. In the overall claim causes (all field ranks), this factor was ranked at the first position. This indicates that awarding a bid to the lowest bidder was considered as the main cause of claims. The contractors agreed that these issues affected them in winning bids at a fair cost. The contractors complained that there was no pre-qualification of contractors before the tendering stage. In Palestine, owners award bids to the lowest bidder when, in some cases, the contractor does not even possess the capacity to execute the project. Astonishingly, these contractors, in most cases, reduce their bid value from the actual cost without any consideration while estimating the project items just to win the project. They are not aware of the unexpected events that they might have to face during the project implementation.

The respondents ranked "payment requests are not entertained within the stipulated time period" as the second most important cause factor with RII value of 0.617. In the overall causes for this field, this factor was listed at the seventh position. This result indicates that payment requests were not properly entertained. The contractors agreed that this issue affected their activities and caused delays in work progress because contractors can run the job by receiving payments on time. The delays in payment caused financial difficulties to the contractors which led to a slowing down progress of the projects. In some cases, the projects were suspended because of payment delays. These issues pushed the contractors to request for compensation from the owner.

The respondents' ranked "awarding process took longer period after bid opening" as the third most important cause factor with RII value of 0.593. In the overall claim causes (all field ranks), this factor was listed at fourteenth position. This result indicates that delays in awarding process after bid opening causes difficulties to the contractor for starting up the project implementation. These delays affected the contractor's estimated cost of material particularly due to instability in prices in the local market. The issues of scarcity of materials and unexpected material price increments forced contractors to request for price compensation. These requests were generally turned down by the owners.

The respondents ranked "poor contract management and ambiguities" as the fourth most important cause factor with RII value of 0.563. In the overall claim causes (all field ranks), this factor was ranked at the twentieth position. This means that poor contract management and ambiguities in the contracts were considered as an important source of claim factors. Most contractors agreed that this issue affected them when ambiguities were found in the provisions of their contract. In contract management, the engineer always supported the owner which created unfairness between the contracting parties. It was found that in some contracts there were ambiguous provisions which increased the contractors' misunderstanding about these provisions. The poor contract management in Palestine led the contracting parties to interpret the contract provisions according to their own interests or benefits. Nonetheless, the owner is bound to reject any false claims.

The respondents ranked "interpreting items in the contract with no reference to the Palestine law" as the sixth factor with RII value of 0.485. In the overall claim causes (all field ranks), this factor was ranked at the thirtieth position. This result indicates that this factor was not serious in causing construction claims particularly when almost all public contracts were found compatible with the Palestinian law.

The respondents ranked "changes in the legislation and processes (for example, tax free commodities or changes in the tax rate.)" as the seventh factor with RII value of 0.476. In the overall, this result shows that this factor was considered as the lowest factor in the contractual relationship area. Changes in the legislation and processes happen rarely; so in general, this factor did not affect the construction process directly.

Group 4: Emergency cases

The respondents were asked to give their response about the causes of claims occurring because of emergency cases. Owing this, Table 5 shows the statistical results including relative importance index (RII), sub-field rank and field rank as perceived by the respondents.

Table 5 Contractors views about emergency cases

Group 4- Emergency cases	**RII**	**Sub field Rank**	**All Field Rank**
Borders closures	0.690	1	2
Road blockage and difficulties to pass between cities and governorate	0.645	2	4
Natural conditions factors (bad weather. .etc)	0.512	3	27
Unforeseen issues arose on-site	0.512	3	27
Demonstrations and strikes	0.479	5	31
Average of Relative Importance Index	0.567		

The result shows that the average relative index of group IV is 0.567 with third position of rank order among the four groups. The overall relative importance index of all causes of construction claim is 0.547. Thus, the value of average relative index for the causes of claims caused by emergency cases is higher than the average value of RII. This means that claims factor caused by emergency cases factors can be considered as the high group which caused claims on constructions projects.

The respondents ranked "border closures" in the first position with RII value of 0.690. In the overall claim causes (all field ranks), this factor was ranked at the second position. In Palestine, border closures were considered as the main source of claim factors. Contractors agreed that this issue affected them a lot in their project implementation because all projects activities were dependent on the availability of construction material. Because of border closures, contractors were not able to perform project activities resulting in wastage of their time and money. In these cases, contractors requested compensation from the owners.

The respondents ranked "road blockage and difficulties to pass through cities and governorate" as the second most important factor with RII value of 0.645. In the overall claim causes (all field ranks), this factor was ranked at the fourth position. Contractors agreed that this issue affected their activities and caused delays in work progress. The contractors revealed that frequently, the Israeli army divided the Gaza Strip into three to four areas by establishing lots of check posts preventing contractor and their materials from passing through. This issue caused delays in project implementation. Additionally, this issue caused increase in the project costs and created financial difficulties to contractors.

The respondents ranked "natural conditions factors (bad weather, etc)" as the third most important cause factor with RII value of 0.512. In the overall claim causes (all field ranks), this factor was listed at the twentyseventh position. This indicates that natural conditions factor (e.g. bad weather) forced contractors to stop project activities. This issue resulted in increasing contractors' running expenses particularly when bad weather conditions continued for a longer period. The contractors explained that they submitted claims for compensation especially when bad weather caused damages to their works approved by the owner's supervisions team to go ahead with construction.

The respondents ranked "unforeseen issues arose on-site" as the third most important cause factor with RII value of 0.512. In the overall claim causes (all field ranks), this factor was ranked at the twentyseventh position. This means that unforeseen issues arising on-site were considered as a source of claims factors. Contractors agreed that these issues affected their progress when unexpected activities needed to be done on-site. Consequently, these issues resulted in delaying project activities. Contractors requested additional costs for unforeseen issues that arose on site particularly ones that caused delays in the work progress.

The respondents ranked "demonstrations and strikes" as the fifth factor with RII value of 0.479. In the overall claim causes (all field ranks), this factor was ranked at the thirtyfirst position. Respondents agreed that this factor was not serious in causing construction claims. The Gaza construction industry is not controlled by unions such as labor unions so it is not affected by strikes and demonstrations.

The results of this study are in line with factors identified by Odeh and Battaineh (2002). They found contractors and consultants are in agreement that owner interference, inadequate

contractor experience, financing and payments, labor productivity, slow decision making and improper planning are some of the important factors causing construction delays which ultimately provide a fertile ground for costly claims. However, this study is not without limitations. The construction experience of the respondents as a predictor of causes of claims underlines the importance of this extension of the analysis into the internal information of the contractors. Further planning is to study some typical clauses of contracts such as (1) time, delay and extension; (2) termination of contract; (3) liquidity damages; (4) deviation limits and scope of work; and (5) price escalation which are related to claims.

CONCLUSION

This paper aimed at identifying and ranking causes of claims according to their relative importance in the construction industry from the perspective of local contractors. The study findings of the first group (causes of claims caused by owners) indicated that residents' interference during project implementation caused delays to the contractor's activities. The findings of the second group (design and bill of quantities) indicated that the respondent ranked 'different description for the item in the bill of quantities from what was mentioned in the specification' in the first position. The factor 'drawings and bill of quantities are not fitting the construction site' was ranked in the second position in the second group.

The findings of the third group (contractual relationship factor) indicated that the factor 'awarding bid to the lower bidder' was ranked in the first position. The factor 'payment requests are not entertained within the stipulated time period' was ranked as the second most important cause factor in the third group. The important findings of the fourth group "emergency cases" indicated that the factor 'border closures' was ranked in the first position. "Road blockage and difficulties to pass between cities, occupied cities and governorates" factor was ranked in the second position within the fourth group

This study indicates that avoiding construction claims requires an understanding of the causes of claims as well as the contractual terms and conditions. From the study, it is advisable that contractors recruit a good project manager who has an appropriate experience in construction project implementation and knowledge of construction claim. Further, owners and contractors need to hold training programs on construction claim management to increase their employees' awareness of this issue. Owners need to allow reasonable time to the design team for producing clear and complete contract documents.

During the project planning and design stage, owners need to increase awareness within the local community about the benefits of the project to avoid interference from local residents during the project implementation stage. This can be done through conducting public hearings and workshops. Owners need to assist contractors more effectively in removing obstacles so that a project can be implemented without delays. Finally, there must be a close cooperation between the contracting parties to control, minimize and avoid reasons for claims occurring on construction projects. This is necessary to reduce causes of claims and accordingly minimizing delays and cost overruns on construction projects. The researchers hope that the arguments and findings presented in this study provide some guidance and information that managers and industry practitioners can utilize to manage their projects.

ACKNOWLEDGEMENT

The authors would like to thank the three anonymous referees for their valuable suggestions which have led to the improvement of the paper.

REFERENCES

Ahuja H. N. (1994). *Project Management Techniques in Planning and Controlling Construction Projects. Second Edition*, University of Toronto.

Alkalil, M. and Alghafly, M. (1999). Important causes of delay in public utility projects in Saudi Arabia. *Construction Management and Economic*, Vol. 17, 647-655..

Al Moumani H. A. (2000). Construction delays: A quantitative analysis. *International Journal of Project Management,* Vol. 18, 51-59.

Arditi, D. and Patel, K. (1989). Expert system for claim management in construction projects. *International Journal of Projects Management*, 7(3), 141-146.

Bramble, B. B. (1990). *Avoiding and Resolving Construction Claims*. First Edition, RS Means Company, INC.

Bramble, B. B. and Callahan, M. T. (1992). *Construction Delay Claims*. Second Edition. Wiley, NY.

Bubshait K. and Manzanera, I. (1990). Claim management. *International Journal of Projects Management,* 8(4), 222-228.

Creative research systems, www. surveysestem.com. retrieved on 30.05 2008

Iwamatsu, J., Akiyama, T. and Endo, K. (2008). Construction claims and disputes and the business culture of construction in Japan. *Journal of Professional Issues in Engineering Education and Practice*, 134 (1), 119-127.

Kartam, S. (1999). Generic methodology for analyzing delay claims. *Journal of Construction Engineering and Management*, 125(6), 409-419.

Mitchell, R. S. (1998). *Construction Contract Claims, Changes and Dispute Resolution.* Second Edition. American Society of Civil Engineers. NY.

Naoum, S. G. (1998). Dissertation Research and Writing for Construction Student. Reed Educational and Professional Publishing Ltd.,

Odeh A. N. and Battaineh H. T. 2002. Causes of construction delays: Traditional contracts. *International Journal of Project Management,* Vol. 20, 67-73.

Palestine Central Bureau of Statistics (PCBS), Reports, www.pcbs.gov.ps, 2006. Retrieved on 1st July 2006.

Palestine Contractors Union (PCU), Reports 2005, .

Powell, S. V. and Stephenson, D. (2000). *Civil Engineering Claims.* Blackwell Science, Oxford.

Riad, N., Arditi, and Mohammad, J. (1991). A conceptual model for claim management in construction. *Journal of Computers and Structures*, 40(1), 67-74.

Tam, C. M., Deng, Z. M., Zeng, S. X, and Ho, C. S. (2000). Quest for continuous quality improvement for public housing construction in Hong Kong. *Construction Management and Economics,* 18(4), 437-446.

Vidogah, W. and Ndekugri, I. (1998). Improving the management of claims on construction contract: Consultants perspective. *Construction Management and Economic*, Vol. 16, No. 3, 363-372.

Wideman, R. M. (1990). Construction claims identification, communication and record keeping. A paper presented to a TUNS/Revay Seminar in 1990. www.maxideman.com Retrieved on 7 June 2008.