

## Factors Considered in Bidding Decisions by Small and Medium size Contractors

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**Abstract:** The construction sector is one of the key economic sectors and is the main force motivating the Palestinian national economy. Decision-making in construction industry is a very complex task due to uncertainty about many factors influencing the outcomes of the selected choice. The aim of this paper is to identify the attitude of small and medium size contractors regarding bid/no bid and mark up decision. A total of 94 factors that are believed to have influence on the bidding decision making process were identified. Questionnaire survey was used in this study and a total of 77 small to medium-sized contracting companies were included in this study. The results indicated that, small contractors have to some extent different approach in deciding both bidding decisions especially in the markup decision which can involve high risk due to their limited resources and capacity of the company. The current financial capacity of the client was the most important factor which affects bidding decision for both size contractors. Project duration was the important factor for small size contractors regarding their markup size decision, whereas the political factor was the most important for medium size contractors. Small contractors are advised to have joint venture with some success larger contractors to improve their managerial and experience and to reduce the financial risk in the project, which will help them to inter into a new market and to be involved and bid in larger and new types of projects in the future. Local contractors are advised to define their objectives for long-term especially these related to the strategic considerations with clients, consultants, and employees.

**Keywords:** contractors, comparison, bidding, decision, company size

العوامل التي تؤثر على اتخاذ الشركات صغيرة ومتوسطة الحجم قرار

### المشاركة في العطاءات

**ملخص:** تعتبر صناعة الإنشاءات من أهم القطاعات التي تساهم في دعم الاقتصاد الوطني في فلسطين . إن عملية اتخاذ القرارات في صناعة الإنشاءات تعتبر عملية معقدة نتيجة للظروف التي يصعب توقعها وتؤثر على عملية اختيار العطاءات ، تهدف هذه الدراسة إلى التعرف على وجهات نظر شركات المقاولات ذات الحجم الصغير والمتوسط بخصوص اتخاذ القرارات للمشاركة في العطاءات وتحديد قيمة الربح وهامش المخاطرة. حيث تم تحديد 94 عنصر يعتقد أنها تؤثر على اتخاذ مثل هذه القرارات. وقد شملت عينة هذه الدراسة على 77 شركة مقاولات في محافظات غزة وقد أشارت النتائج أن طريقة المشاركة للشركات ذات الحجم الصغير تختلف عن تلك الشركات ذات

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الحجم المتوسط وذلك بمحدودية مواردها وكذلك المخاطر التي تؤثر على المشروعات . ولقد خلصت الدراسة بعدة توصيات لتطوير نظام اتخاذ القرارات لشركات المقاولات ذات الحجم الصغير والمتوسط .

**الكلمات المفتاحية:** المقاولين ، العطاءات ، القرارات ، حجم الشركات .

### Introduction

In developing countries, the construction industry is the key barometer of economic performance. It contributes a significant percentage of GDP of these countries and provides employment to a substantial portion of the working population. In this regard, the construction industry is an important factor when economic policies of these countries are formulated [1]. The construction industry plays a significant contribution to national economies; it also plays an important role in socio-economic development. The industry's contribution to GDP has grown from 5.0% in 1994 to 16% in 2000 [2]. It employs around 17% of the total number of people employed. Contractors in the Gaza Strip are classified into 5 categories from group 1, for the largest contractors to group 6 for smallest contractors [3]. This classification depends on annual turnover, professional staff, skilled staff, and the maximum contract value. However, most contractors can be generally considered as small to medium sized enterprises (SMEs).

Although there is a general consensus of the definition of the SMEs in developed economies, there is no general acceptable definition of SMEs in developing countries [4]. Most of SMEs in the Gaza Strip lack organization, lack of knowledge in modern management techniques, poor supervision, and lacked equipment to undertake construction works. It is important therefore that local companies find solutions to these emerging threats. The construction industry in Gaza is characterized by poor project performance. Many projects are completed late and over budget [5]. One of the most important decisions that have to be made by contracting firms is whether to bid or not to bid for a project, when an invitation has been received [6]. Both the bid decision and the determination of the bid price are very important to every contractor. The importance of such decisions lies in the fact that, the success or failure of a contractor's business depends on the outcomes derived from these decisions. The aim of this paper is to identify the attitude of small and medium size contractors regarding bid-no bid and mark up decision.

### A brief review of previous studies

Bidding is a very complex decision requiring simultaneous assessment of large number of highly inter-related variables to arrive at a decision [7].

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Since contractors' bidding behavior is affected by numerous factors related both to the features of the project and dynamically changed situations, bidding decision problem are highly unstructured. Bennett [8] reported that one of the most important decisions that have to be made by a construction company is whether or not to bid for a new project when an invitation has been received. It is not possible for the contractor to prepare a tender for every available project. Even in lean economic times, when jobs are scarce, some means must be employed by company management to decide whether to prepare a cost estimate and tender for a particular project. Shash [9] stated that, in competitive bidding, the bidding process involves two critical decisions. The first is to bid or not to bid for a sublet work decision. The second decision is that the contractor wants to decide on mark up size that increases the chance of achieving a dominating criterion of the competition. Ahmad [10] also stated that the bidding decision-making problems are faced by general contractors in closed competitive bidding situations. There are two distinct but sequential stages in the bidding decision making process, the bid/no bid decision and the percent markup selection. Shash [1] found that both the bid decision and the determination of bid price are very important to every contractor. The importance of such decisions lies in the fact that the success or failure of a contractor's business depends on the outcomes derived from these decisions. Both decisions are considered complex due to the consequence of each alternative is uncertain, and there are a large number of factors having considerable effects on both decisions. The construction industry is extremely fragmented and highly competitive. Contractors have to bid competitively for most of their work and at the same time deal with risks and uncertainties connected with bid submission. A great deal of current information is needed together with forecasts of demand, cost, competition, etc., to enable bids to be set and adjusted to desired profit levels [12]. Competitive bidding on construction projects involves decision making under uncertainty where one of the greatest sources of the uncertainty for each bidder is due to the unpredictable nature of his competitors [11]. Ahmad and Minkarah [13] presented the factors affecting the bidding decision of top US contractors. Their attempt resulted in the identification of 31 factors affecting the bid decision. Skitmore [14] presented the application aspects of statistical models in tendering decisions. Akintoye and Skitmore [12] analyzed the UK tender price for the purpose of finding an appropriate explanation for their movement. Shash [9] identified 55 factors affecting the bidding decision making process of top UK contractors. Shash [11] also identified many factors characterizing the bid decision making process to subcontractors in Colorado. Egemen and

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Mohamed [15] identified the key determining 83 factors and their importance weights to bidding decisions by presenting survey findings of 80 contracting firms from Northern Cyprus and Turkish construction markets. A study was conducted by Jaselskis and Talukhaba [16] to determine informational requirements of architectural, engineering and construction firms interested in bidding work on international construction projects. Ahmad [10] divided the factors representing major objectives of a construction firm into four hierarchical groups: job related factors, market related factors, firm related factors, and resources related factors. Egemen and Mohamed [15] stated that there are three main categories of factors that are contributing to the final decision, which are: Firm related factors, Project related factors, and Market Conditions/Expectations and Strategic Considerations. Detailed hierarchies and many sub goals exist for each of these three main categories. Carr and Sandahl [17] identified the factors that affect the bidding decision which fall into three main categories, namely Job characteristics, Economic environment and competition condition. Flanagan and Norman [18] identified several factors which affect bidding behavior. Akintoye and Skitmore [12] studied the factors affecting markup size and pricing decisions and they grouped them into four broad areas identified: environmental factors, profitability, and procurement. Leary [19] studied the considerations in the general contractor's decision to bid or not to bid from other point of view that he studied the problems facing the bidders. He stated that the architect and engineers who set up and administrate bidding procedures or who advise clients on how to do it should be aware of the practical problems facing general contractor bidders. Bennett [8] reported that there are some factors that must be considered when deciding to bid or not to bid; these factors were categorized to three main categories: Items related to project characteristics, Items related to company status and its strategic positioning, and Items related to external conditions

### **Methodology**

The population of this research is the contracting companies which are registered in the Palestinian Contractors Union (PCU) in Gaza Strip and classified by the national classification committee and have valid registration in the PCU. According to the PCU in Gaza Strip the number of construction companies registered and graded according to the field of work is 183 companies. The contractors were classified in this study for two groups which are small and medium size contractors according to their annual sales. There are three main categories of factors that are contributing to the final decision, which are 'Firm-Related Factors', 'Project-Related

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Factors' and 'Market- Conditions/Expectations and Strategic Considerations' [15]. 'Firm-related factors' are investigated under two main sections, which are the current need of the contracting organization for obtaining new work and the strength of the contracting organization compared to possible major competitors in this bidding process. 'Project-related factors' are identified and investigated under three main categories, which are 'project profitability', 'project risk' and 'competition due to project condition'. Project risk is further divided into more sub-categories. Competition expected considering project-related conditions only included as a separate sub goal as well. 'Market conditions/ expectations and strategic considerations' include 'competition due to existing market conditions only', 'strategic considerations of the firm' and 'market clients' (and their representatives) overall demand or expectations from contracting organizations'. The proposed bid decision takes into account strategic considerations of the firm and possible long-term effect of the decisions.

The contractors were classified in this study into two groups which are small and medium size contractors according to their annual sales. 25 companies obtain work with an average size fewer than 1.0 million Dollars annually were classified as small size companies. A total of 52 companies have annual sales over than 1.0 million Dollars which are classified as medium size companies. The majority of the contractors surveyed performed building projects (e.g. educational, hospitals, commercial). About half of respondent companies have over ten permanent employees. The majority of the surveyed contractors subcontract almost 70% of their work. The designations of the respondents were 65% company directors and 35% were project managers. A first draft of questionnaire was developed on the basis of literature review [9, 10, 11, 12, 13, 14, 15, 18, 25]. Modifications, new questions, and new factors were added after interviewing experienced contractors in Gaza Strip. The final questionnaire contained 94 factors divided into three main categories consist of 16 groups to be studied.

Importance rating was from 1 to 6 where 1 represented of low importance, 6 represented most importance and the importance of the factors steadily increased with increasing values from 1 to 6. For every single factor, two importance values were specified, one for each of the two major decisions mentioned previously. Data from the questionnaire were extracted to derive the importance weight of the factors. To determine the relative ranking of

the factors, these scores were then transformed to importance indices based on the formula [20, 21, 22, 23, 24]

Relative Importance Index (RII) =

$$\frac{\sum W}{AN} = \frac{6n_6 + 5n_5 + 4n_4 + 3n_3 + 2n_2 + 1n_1}{6N}$$

Where  $W$  is the weighting given to each factor by the respondent, ranging from 1 to 6, ( $n_1$  = number of respondents for Strongly disagree, ...,  $n_6$  = number of respondents for strongly agree).  $A$  is the highest weight (i.e. 6 in the study) and  $N$  is the total number of samples. The relative importance index ranges from 0 to 1. Tables below show the relative importance index of each factor.

## Results

### Category 1: Firm related factors

In this section the firm related groups and factors in bid/no bid and markup size decisions were studied according to the contractor's size. There were two groups studied under this category which are need for work and strength of firm. The most important factors in each group will be discussed.

#### Need of work factors group

Table 1 illustrated that small and medium contractors considered the current financial situation of the company as the most important factor in bid/no bid decision with RII=0.86 and RII=0.81 respectively, these results show that the small contractors considered it more serious than medium contractors since RII for small contractors are larger than the RII for medium contractors. They ranked it in overall rank as the second important factor among the 94 factors investigated in this research and the medium contractors ranked it as the 15<sup>th</sup> important factor in overall factors in bid/no bid decision. This refers to the fact that the financial capability of small contractors is very limited comparing to the medium contractors. The same factor was also considered high important factor by both types of contractors in markup decision, it was ranked by both of them as second important factor within this group. In overall rank, the small contractors ranked it as the 16<sup>th</sup> important factor with RII=0.69 and the medium contractors ranked it as the 33<sup>rd</sup> important factor in markup decision with RII=0.73, but the results show that the medium contractors considered it more important, because usually the medium contractors work in larger jobs that involve more risk than the small jobs that small contractors run.

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**Table 1: Need for work for small and medium contractors**

Factors description	Bid/No Bid						Markup Size					
	Small			Medium			Small			Medium		
	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank
The current workload of projects, relative to the capacity of your firm	0.78	2	9	0.79	2	23	0.73	1	9	0.75	1	20
Availability (number and size) of other projects within the market	0.71	3	29	0.71	4	56	0.63	3	40	0.64	4	68
The current financial situation of the company	0.86	1	2	0.81	1	15	0.69	2	16	0.73	2	33
The need for continuity in employment of key personnel and workforce	0.64	4	54	0.74	3	45	0.57	4	69	0.67	3	55
The current workload in bid preparation	0.50	5	89	0.54	6	92	0.52	5	82	0.53	6	91
The major plants and equipment owned. Which are not used	0.48	6	92	0.64	5	80	0.46	6	92	0.60	5	84
<b>Total</b>	<b>0.66</b>		<b>8</b>	<b>0.71</b>		<b>12</b>	<b>0.60</b>		<b>10</b>	<b>0.65</b>		<b>12</b>

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The current workload of projects, relative to the capacity of your firm was also considered by small and medium contractors as high important factor in both decisions; it was ranked by both types of contractors as the first important factor in markup and the second important factor in bid/no bid decision. The results show that the medium contractors considered this factor slightly important than small contractors in both decisions even the small contractors ranked it in both decisions higher than medium contractors in overall rank. In bid/no bid decision small contractors ranked it as the ninth important factor with  $RII=0.78$  and the medium contractors ranked it as 23<sup>rd</sup> important factor with  $RII=0.79$ , and in markup decision, the small contractors ranked it as ninth important factor with  $RII=0.73$  and the medium contractors ranked it as the 20<sup>th</sup> important factor with  $RII=0.75$ .

The small contractors ranked the other four factors the same in both decisions within the group which also the medium contractors did. The affect of difference in size of the two types of companies were clear in some factors such as, the need for continuity in employment of key personnel and workforce which was ranked by medium contractors as 45<sup>th</sup> important factor in bid/no bid decision ( $RII=0.74$ ) and as 55<sup>th</sup> in markup size decision ( $RII=0.67$ ), the same factor was ranked by small contractors as 54<sup>th</sup> important factor in bid/no bid decision ( $RII=0.64$ ) and 69<sup>th</sup> in markup size decision ( $RII=0.57$ ). This refers to the fact that the permanent employees in the medium companies are much more than small contractors who usually depend on temporary employees. The results of this group indicated that the medium contractor consider this group more important than small contractors, it is seen that medium size contractors assigned higher importance score to the group and most of the factors included in it. Even though, the small contractors ranked this group higher than medium contractors, it was ranked by small contractors as eighth important group in bid/no bid with  $RII=0.66$  and tenth important group in markup decision with  $RII=0.60$ , the medium contractors ranked this group as 12<sup>th</sup> important group in bid/no bid and markup decisions with  $RII=0.71$  and  $RII=0.65$  respectively.

### **Strength of firm factors group**

Table 2 illustrates that the financial status of the company (working cash requirement of project) was considered the most important factor by small and medium size contractors in bid/no bid decision with almost the same importance score which are  $RII=0.86$  and  $RII=0.84$  respectively. This factor was also considered by both types of contractors as one of the most ten important factors in overall rank in bid/no bid decision, it was ranked by small contractors as third important factor in overall factors and the seventh



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important factor by medium contractors. The same factor was not considered high important factor by both types of contractors in markup decision in overall rank. It was ranked as 36<sup>th</sup> important factor by small contractors with RII=0.68 and 34<sup>th</sup> important factor with RII=0.72 by medium size contractors. This factor was ranked as second important factor within the group by small contractors and the fourth important factor by medium contractors. These results give indication that this factor is playing main role in both types of contractor's decision to bid or not to bid and if the company made the decision to bid then it is not playing the same role, the results also show that there was not strong relation between the size of the company and the financial status of the company since every company think about it at the same level of serious but according to its size.

The contractors were asked to give importance score to the factor related to completeness of fulfilling to tender conditions imposed by the client, the results show that the small contractors considered it as second important factor in bid/no bid decision and ninth important factor in overall rank with RII=0.78 and they ranked it as first important factor within the group in markup decision and the 17<sup>th</sup> important factor in overall factors with RII=0.69. Medium contractors had different point of view in the order of this factor in overall rank in bid/no bid decision; they ranked it as 22<sup>nd</sup> important factor and as third important factor within the group in the same decision with RII=0.80. They almost agreed with small contractors in its order in markup decision; they ranked it as 20<sup>th</sup> important factor with RII=0.75 in overall rank and the second important factor within the group. The importance scores of this factor in both decisions show that both types of contractors almost consider it at the same level of importance, however, the ranks of it show that the small contractors consider it more serious than medium contractors and that may be refer to that the small contractors usually have limited sources and can not sometimes fulfilling the requirements of client.

Experience and familiarity of the firm with this specific type of work also considered high important factor by both types of contractors in both decisions. In bid/no bid decision, this factor had almost the same influence on both types of contractors, the small contractors ranked it as third important factor within the group and 13<sup>th</sup> important factor in overall rank with RII=0.76. The medium contractors ranked it as second important factor within the group and the 11<sup>th</sup> important factor in overall rank with RII=0.82. These results give indication that there is no strong relation between the size of the company and the experience and familiarity of the firm with the type of the work in bid/no bid decision. However, the opposite is true in the case

of markup, the results show that the medium contractors considered it more important than small contractors. The medium contractors ranked it as first important factor within the group and the 18<sup>th</sup> important factor in overall rank with RII=0.75. The small contractors ranked it as 25<sup>th</sup> important factor in overall rank and the fourth within the group with RII=0.64.

In the other factors there were some observations between the two types of contractors. The small contractors considered the amount of equipment that needs to be hired and the hire rates in the market more important than medium contractors in bid/no bid decision, they ranked it as 37<sup>th</sup> important factor with RII=0.68 in overall rank and the medium contractors ranked it as 71<sup>st</sup> important factor with RII=0.67. In the previous group, which was the need for work, when the contractors were asked about the influence of major plants and equipment owned which are not used the small contractors almost neglected it and they ranked it as 92<sup>nd</sup> important factor in bid/no bid decision, the reason for that is clear here that they depend on hiring the necessary equipments so they ranked it high when they asked about the amount that needs to be hired.

#### **Category 2: Project related factors**

In this section the project related factors influencing bid/no bid and markup decisions were investigated for small and medium size contractors. The project related category was studied under three main groups which were "project conditions contributing to profitability of the project", "risk of the project" and "competition (considering only the current project)". The main group "risk of the project" was further divided into two groups which were "job related risk" and "risk due to unstable country conditions" the group of job related risk contained four subgroups which were "project uncertainty", "job complexity", risk creating job contract conditions" and "client and consultant of the project". The group of risk due unstable country conditions contained three subgroups which were "economic conditions and instability", "availability of resources within the region" and "laws and government regulations in the construction".

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**Table 2. Strength of firm for small and medium contractors**

Factors description	Bid/No Bid						Markup Size					
	Small			Medium			Small			Medium		
	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank
Completeness of fulfilling to tender conditions imposed by the client	0.78	2	9	0.80	3	22	0.69	1	17	0.75	2	20
Financial status of your company (working cash requirement of project)	0.86	1	3	0.84	1	7	0.68	2	36	0.72	4	34
Experience and familiarity of your firm with this specific type of work	0.76	3	13	0.82	2	11	0.64	4	25	0.75	1	18
Possessing enough number of qualified technical staff	0.59	8	69	0.72	7	51	0.51	11	22	0.64	10	73
Possessing enough number of required plant and equipment	0.58	10	74	0.72	8	54	0.62	7	36	0.70	6	48
Having qualified subcontractors	0.58	9	71	0.66	10	73	0.59	10	86	0.62	11	80
Having qualified material suppliers	0.71	4	28	0.77	4	32	0.64	6	42	0.73	3	29
The amount of equipment that needs to be hired and the hire rates in the market	0.68	6	37	0.67	9	71	0.61	8	59	0.66	7	58
The amount of work to be subcontracted relative to the total volume of work	0.54	11	82	0.64	11	81	0.60	9	39	0.65	8	62
Familiarity of your firm with geographical and social aspects of construction location	0.69	5	34	0.75	5	39	0.64	4	46	0.70	5	47
Possessing enough number of qualified managerial staff	0.63	7	58	0.73	6	46	0.66	3	53	0.64	9	64
Total	0.67		4	0.74		7	0.63		8	0.69		10

**Project conditions contributing to profitability of the project group**

As shown in Table 3, this group was considered very high important group by small and medium contractors in both decisions. The project size (total bid value) was considered the most important factor by both types of contractors in bid/no bid decision, and it was also as the first important factor in overall rank by small contractors with  $RII=0.88$ , the medium contractors ranked it as second important factor in overall rank with  $RII=0.86$  in bid/no bid decision. In the markup size decision it was ranked high important too, even the importance scores in small and medium size contractors were the same ( $RII=0.79$ ) but the small contractors ranked it in prior order, they ranked it as first important factor within the group and the third important factor in overall rank. The medium contractors ranked it as second important factor within the group and the 11<sup>th</sup> important factor in overall rank. These results indicate that the project size influence the decision of the both types of contractors at the same level of importance neglecting its size. Also both types of contractors consider it so important in markup even it is clear that the medium contractors have some other priorities since they ranked it as 11<sup>th</sup> factor.

Terms of payment was another important factor considered by both types of contractors in both decisions, it was ranked as second important factor within the group in bid/no bid decision by both types of contractors and as sixth important factor in overall rank by small contractors ( $RII=0.79$ ) and the fifth important factor in overall rank by medium contractors ( $RII=0.85$ ). In markup decision, both contractors ranked it as fourth important factor in overall rank but the medium contractors ranked it as first important factor within the group ( $RII=0.82$ ) and the small contractors ranked it as second important factor ( $RII=0.77$ ). Even the results of importance scores show that the medium contractors consider the terms of payment more serious than small contractors in both decisions but they also show that whatever the size of the company it is so important factor in making bidding decisions. This refers to the fact that the financial capability of many contractors (whatever their size) is not strong enough and they depend on the regular payments of the project to cover its cost.

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**Table 3. Project conditions contributing to profitability of the project**

Factors description	Bid/No Bid						Markup Size					
	Small			Medium			Small			Medium		
	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank
Project size (total bid value)	0.88	1	1	0.86	1	2	0.79	1	3	0.79	2	11
Terms of payment (monthly/ quarterly/...)	0.79	2	6	0.85	2	5	0.77	2	4	0.82	1	4
Project type	0.79	3	8	0.84	3	7	0.69	3	17	0.73	3	28
Profits made in similar projects in the past	0.74	4	16	0.81	4	17	0.69	3	17	0.73	3	29
Project location	0.74	4	16	0.78	5	26	0.67	5	24	0.72	5	34
Project duration	0.65	6	49	0.74	6	41	0.64	6	36	0.69	6	50
Total	0.77		1	0.81		2	0.71		2	0.75		2

It is clear that the project type had great influence on bid/no bid decision in both types of contractors. It was ranked as third important factor within the group by both types of contractors in bid/no bid decision, small contractors ranked it as the eighth important factor in overall rank with RII=0.79 and the medium contractors ranked it as seventh important factor with RII=0.84. Project type was not considered by both types of contractors as much important as it was in bid/no bid decision, it was ranked as third important factor within the group both types of contractors but it was ranked by small contractors as 17<sup>th</sup> important factor with RII=0.69 and was ranked as 28<sup>th</sup> important factor by medium contractors with RII=0.73. These results show that the both types of contractors prefer specific types of works and it is one of the main factors that according to it they decide to bid or not but when they decide to bid then it is not very high important factor and there are many other priorities.

**Project uncertainty group**

Table 4 illustrate that the factors included in this group were considered by small and medium size contractors as average important factors except one factor which was considered by both types of contractors as high important especially in markup decision which was the amount of changes expected throughout the execution of this project. It was ranked as first important within the group in both decisions by both types of contractors, the small contractors ranked it in overall rank in bid/no bid decision as 16<sup>th</sup> important factor with RII=0.74, the medium contractors ranked it as 17<sup>th</sup> important factor in overall rank in the same decision with RII=0.81. Both types of contractors considered this factor as one of the most ten important factors in overall factors in markup decision, it was ranked by small contractors as fourth important factor with RII=0.77 among the 94 factors studied in this research, the medium contractors ranked it as sixth important factor with RII=0.81 in overall rank in the same decision. These results give indication that both types of contractors considered this factor very important especially in markup decision since any changes throughout the execution can be evaluated by contractor without any considerations to the size of the company.

When the contractors were asked about the confidence they have in cost estimate of their firms' estimators, the results reveals that it was considered very important in markup decision by both types of contractors especially by small contractors. It was ranked by both types of contractors as the second important factor within the group in markup decision. In overall rank in the same decision, it was vary significantly according to the company

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size, small contractors ranked it as sixth important factor with RII=0.75 and medium contractors ranked it as 16<sup>th</sup> important factor with RII=0.76. In bid/no bid decision the both contractors scored this factor around the average importance, it was ranked by small contractors as 29<sup>th</sup> important factor with RII=0.71 and the second important factor within the group, the medium contractors ranked it as third important factor within the group and the 33<sup>rd</sup> important factor with RII=0.75 in overall rank. These findings seem to be reasonable since the risk that may occur according to mistakes that may be done by estimators can affect both types of contractors in the same level of importance.

When the contractors were asked about the confidence they have on their subcontractors in the project small and medium contractors ranked it as fifth important factor within the group in bid/no bid decision with RII=0.67 and RII=0.72 respectively, and both ranked it as fourth important factor in markup decision within the group with RII=0.65 and RII=0.71 respectively. There were slightly differences in the scores of small and medium contractors, medium contractors scored the factor in both decision slightly higher than small contractors which reflect better understand of the medium contractors to the role of subcontractors, however, the prior rank of this factor stated by small contractors show that the small contractors depend more on subcontractors for finishing their projects successfully.

### **Job complexity group**

It can be seen that both scores and the ranks for bid/no bid and markup decisions vary significantly according to the size of the company in the subject of job complexity as shown in Table 5. It is seen that the medium-sized contractors assigned higher importance scores to the all of the factors included in this group and to the average importance of this group. In general, this was not expected since smaller contractors might usually have more difficulty dealing with complex projects, however, in the case of local construction market this might be reasonable because the smaller contractors usually work in specific types and size of projects and they are familiar with such project and the job complexity of such projects, this research shows that most of small contractors working in building construction with annual sales less than one million Dollar. Small and medium size contractors assigned the same rank within the group to all of the factors in markup decision and almost the same to the bid/no bid decision, which give indication that both of them recognize the complexity of these factors when these factors studied separately.

**Table 4. Strength of firm for small and medium contractors**

Factors description	Bid/No Bid						Markup Size					
	Small			Medium			Small			Medium		
	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank
Completeness of fulfilling to tender conditions imposed by the client	0.78	2	9	0.80	3	22	0.69	1	17	0.75	2	20
Financial status of your company (working cash requirement of project)	0.86	1	3	0.84	1	7	0.68	2	36	0.72	4	34
Experience and familiarity of your firm with this specific type of work	0.76	3	13	0.82	2	11	0.64	4	25	0.75	1	18
Possessing enough number of qualified technical staff	0.59	8	69	0.72	7	51	0.51	11	22	0.64	10	73
Possessing enough number of required plant and equipment	0.58	10	74	0.72	8	54	0.62	7	36	0.70	6	48
Having qualified subcontractors	0.58	9	71	0.66	10	73	0.59	10	86	0.62	11	80
Having qualified material suppliers	0.71	4	28	0.77	4	32	0.64	6	42	0.73	3	29
The amount of equipment that needs to be hired and the hire rates in the market	0.68	6	37	0.67	9	71	0.61	8	59	0.66	7	58
The amount of work to be subcontracted relative to the total volume of work	0.54	11	82	0.64	11	81	0.60	9	39	0.65	8	62
Familiarity of your firm with geographical and social aspects of construction location	0.69	5	34	0.75	5	39	0.64	4	46	0.70	5	47
Possessing enough number of qualified managerial staff	0.63	7	58	0.73	6	46	0.66	3	53	0.64	9	64
<b>Total</b>	<b>0.67</b>		<b>4</b>	<b>0.74</b>		<b>7</b>	<b>0.63</b>		<b>8</b>	<b>0.69</b>		<b>10</b>



## Factors Considered in Bidding Decisions

**Table 5. Job complexity for small and medium contractors**

Factors description	Bid/No Bid						Markup Size					
	Small			Medium			Small			Medium		
	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank
Technological difficulty of the project being beyond the capability of the firm	0.63	2	60	0.71	3	59	0.65	2	34	0.73	2	29
Management of similar size projects in the past	0.73	1	20	0.75	2	38	0.66	1	25	0.74	1	25
Any safety hazards during project execution stage	0.55	4	78	0.70	4	60	0.45	4	93	0.64	4	68
Site location and accessibility creating risk during project execution	0.63	2	60	0.76	1	34	0.53	3	80	0.70	3	48
Total	0.64		12	0.73		8	0.58		13	0.70		8

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Management of similar size projects in the past was considered by both types of contractors as the most important factor in this group, and it was the only factor in this group which was scored and ranked by both size of contractors with very close results. The medium contractors scored it slightly higher than small contractors in bid/no bid decision, the smaller contractors ranked it as first important factor within the group with RII=0.73 and the 20<sup>th</sup> important factor in overall rank and the medium contractors ranked it as second important factor within the group with RII=0.75 and the 38<sup>th</sup> important factor in overall rank in bid/no bid decision. Small and medium contractors ranked this factor the same in markup decision with RII=0.66 and RII=0.74 respectively, they ranked it as first important factor within the group and the 25<sup>th</sup> important factor in overall rank but with difference in scores. It is clear that the smaller contractors have poor management ability so they considered this factor serious especially in bid/no bid decision. However, the medium contractors considered it important because of the long experience of management of similar projects in the past which was understandable from the scoring of the other factors in this group.

The size, type of the projects and the identity of clients of such projects which usually carry out by medium contractors and the risk involved in such larger projects made them rank the safety hazards much higher than smaller contractors especially in markup decision. It was ranked by small contractors as 78<sup>th</sup> important factor (RII=0.55) in overall rank and the last important factor within the group in both decisions and they ranked it as 93<sup>rd</sup> important factor in overall factors in markup size decision among the 94 factors investigated in this study. The medium contractors according to their better experience in the subject of safety they considered it as 60<sup>th</sup> important factor (RII=0.76) in overall rank in bid/no bid decision, and they ranked it as 68<sup>th</sup> important factor in overall rank in markup decision (RII=0.64).

### **Risk creating job contract conditions group**

As shown in Table 6, the results of this group show that both the scores and the ranks for both decisions especially bid/no bid vary significantly according the size of the contractors. In bid/no bid decision, the medium-sized contractors assigned higher importance scores for 9 factors out of the 10 factors investigated in this group and the small contractors only assigned higher score for one factor only. The factor which was considered higher by small contractors was the availability of advanced payment for the project, it was ranked as the first important factor within the group with RII=0.75 and

## **Factors Considered in Bidding Decisions**

the 15<sup>th</sup> important factor in overall rank in bid/no bid decision. The medium contractors ranked it as fourth important factor within the group with RII=0.70 and the 61<sup>st</sup> important factor in overall rank. This was expected since the financial capability of smaller contractors usually limited and advanced payment is one of the factors that help them in solving many difficulties in the project regarding the financial situation. The same factor in markup decision was ranked by small contractors as seventh important factor within the group with RII=0.59 and the 61<sup>st</sup> important factor in overall rank, the medium contractors ranked it as eighth important factor with RII=0.64 within the group and the 71<sup>st</sup> important factor in overall rank.

Allowed project duration being enough was considered very high important factor in markup decision by both types of contractors. It was ranked as first important factor within the group by both types of contractors and the first important factor in overall rank by small contractors with RII=0.91, and it was ranked by medium contractors as second important factor with RII=0.86 in overall rank. It is clear that both types of contractors consider this factor very carefully which is reasonable in the local construction market due to the current situation. The interesting point in this group that the following factor was the direct result of this factor, in other words, if the allowed project duration was not enough to complete it on time then the contractor will be involved in the penalty conditions of the contract. It is seen that the small contractors due to their limited financial capability selected to be more careful than medium contractors, so this factor playing main role in deciding their final margin of markup without any possible risk in the penalty conditions so they ranked the penalty conditions as fourth important factor with RII=0.65 within this group and the 29<sup>th</sup> important factor in overall rank with large difference in importance score between the two factors. It is seen that the medium contractors had different attitude, they evaluate the two factors as a package, without big difference in importance scores in both decisions, they ranked the penalty conditions as second important factor with RII=0.79 within the group and the eighth important factor in overall rank. This means that the medium contractors found strong correlation between the two factors and according to the two factors as whole decide the final margin of markup, which is more reasonable.

It can be seen that some factors vary significantly either in one or in both decisions according to the size of contractors. Payment conditions of the project creating a risky environment was one of these factors, it was ranked

by small contractors as third important factor within this group with RII=0.67 and the 42<sup>nd</sup> important factor in overall rank. The same factor was ranked by medium contractors as first important factor within the group with RII=0.80 and the 20<sup>th</sup> important factor in overall rank. In markup decision, the small-sized contractors ranked it as third important factor with RII=0.68 within the group and the 23<sup>rd</sup> important factor in overall rank. The medium contractors considered this factor more important, they ranked it as 14<sup>th</sup> important factor with RII=0.76 in overall rank and the third important factor within the group. This shows that medium contractors consider the related risk in the project more serious than smaller contractors, another reason for that may be the size and the type of the projects of both types of contractors, it is clear that the larger works usually contain more risk.

**Client and consultant of the project group**

As shown in Table 7, this group was considered as the most important group by both types of contractors. The medium contractors assigned all of the factors in this group higher than smaller contractors; however, both contractors recognize the importance of the factors included in this group. The current financial capability of the client was considered by both types of contractors as the most important factor in this group in both decisions. It was also ranked as one of the most important factors in overall rank in both decisions. It was ranked by small contractors as the fourth important factor with RII=0.83 in overall rank in bid/no bid decision and the first important factor with RII=0.89 in overall rank in the same decision by medium contractors. It was also ranked by medium contractors as the fifth important factor with RII=0.81 in markup decision, the smaller contractors ranked it as 11<sup>th</sup> important factor with RII=0.72 in overall rank in markup decision.

Both types of contractors also had the same attitude in some factors, they considered them at the same level of importance at least in the rank, however, the results show that the medium contractors take all of the factors in this group more serious than smaller contractors. The donor of the project was one of the factors that considered very important by both types of contractors in both decisions. It was ranked as one of the most important factors in overall rank in bid/no bid decision by both types of contractors, both types ranked it as second important factor within the group, the small

## Factors Considered in Bidding Decisions

**Table 6. Risk creating job contract conditions for small and medium contractors**

Factors description	Bid/No Bid						Markup Size					
	Small			Medium			Small			Medium		
	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank
The rigidity of specifications	0.62	6	63	0.66	8	74	0.71	2	13	0.74	4	24
Allowed project duration being enough	0.67	2	40	0.75	2	37	0.91	1	1	0.86	1	2
The penalty conditions for not being able to complete the project on time	0.55	8	79	0.72	3	51	0.65	4	29	0.79	2	8
Payment conditions of the project creating a risky environment	0.67	3	42	0.80	1	20	0.68	3	23	0.76	3	14
Allowed duration for bid preparation being enough	0.61	7	65	0.68	7	68	0.59	8	61	0.57	10	88
The contract type of the project	0.65	5	54	0.69	5	66	0.60	6	53	0.64	6	64
Dispute resolution process creating any possible risks for the contractor firm	0.51	10	89	0.62	9	86	0.57	9	66	0.64	7	68
Warranty issues, which might possibly create risks	0.65	4	49	0.69	5	66	0.61	5	46	0.74	5	26
Availability of advanced payment for the project	0.75	1	15	0.70	4	61	0.59	7	61	0.64	8	71
Any environment issues related to project	0.52	9	88	0.58	10	89	0.55	10	75	0.63	9	75
Total	0.62		13	0.69		13	0.65		6	0.70		9

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contractors ranked it as fifth important factor with RII=0.83 in overall rank and medium contractors ranked it as third important factor with RII=0.85. The attitude of both types of contractors also was almost the same in markup decision, the small contractors ranked it as second important factor with the group and 12<sup>th</sup> important factor in overall rank with RII=0.71, and medium size contractors ranked it as fourth important factor within the group and 19<sup>th</sup> important factor in overall rank with RII=0.75. Such results reflect the importance of the factor in construction industry in general.

It can be seen that both scores and ranks for both decisions vary significantly according to the size of the contractors. This was clear in the factors "the history of client's payments in past projects", it was ranked by small contractors as third important factor in bid/no bid decision with RII=0.73 and the 21<sup>st</sup> important factor in overall rank in same decision. Medium contractors ranked it higher than smaller contractors, they rank it in bid/no bid decision as second important factor with RII=0.85 and the third important factor in overall rank. the great difference between the two types of contractors refer to the fact that the risk involved in any delay or shortage by client's payment is directly proportion to the size of the project. In markup decision, there was no great difference between the contractors, the small contractors ranked the same factor as third important factor within the group with RII=0.70 and 14<sup>th</sup> important factor in overall rank. The medium contractors ranked it as second important factor with RII=0.79 within the group and ninth important factor in overall rank.

The client's attitude, characteristics and stability in needs, is one of the factors which reflected different attitudes between the two types of contractors, small contractors ranked it as third important factor with RII=0.73 and 21<sup>st</sup> important factor in overall rank. Medium contractors ranked it as fourth important factor with RII=0.84 within the group and sixth important factor in overall rank. The difference between the two types of contractors was less in markup size decision in this factor, small contractors ranked it as 17<sup>th</sup> important factor with RII=0.69 in overall rank and medium contractors ranked it as ninth important factor with RII=0.79, these results reveal that medium contractors consider the risk of such troubles which may occur with clients in both decisions, and the small contractors take the decision to bid in the project faster than medium contractors but consider such problems more serious in markup decision. The consultant's attitude, characteristics and the easiness to work with him, was also reflect the same attitude, small contractors considered it as fifth important factor within the group with RII=0.72 and as 25<sup>th</sup> important factor in overall rank in bid/no bid decision. The same factor was ranked as fifth important factor within the

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**Table 7. Client and consultant of the project**

Factors description	Bid/No Bid						Markup Size					
	Small			Medium			Small			Medium		
	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank
The current financial capability of the client	0.83	1	4	0.89	1	1	0.72	1	11	0.81	1	5
The donor of the project	0.83	2	5	0.85	2	3	0.71	2	12	0.75	4	19
The history of client's payments in past projects (considering delays, shortages)	0.73	3	21	0.85	2	3	0.70	3	14	0.79	2	9
The client's attitude, characteristics and stability in needs	0.73	3	21	0.84	4	6	0.69	4	17	0.79	2	9
The consultant's attitude, characteristics and the easiness to work with him	0.72	5	25	0.82	5	13	0.65	6	35	0.74	5	27
The size of relationship reticulation among the concerned parties in the project and the responsibility of coordination among them	0.66	6	46	0.73	6	48	0.68	5	21	0.72	6	39
Total	0.75		2	0.83		1	0.72		1	0.80		1

group with  $RII=0.82$  and 13<sup>th</sup> important factor in overall rank. In markup decision again the difference was less than bid/no bid decision between the two types of contractors, the small contractors ranked it in markup decision as 35<sup>th</sup> important factor in overall rank with  $RII=0.65$  and medium contractors ranked it as 27<sup>th</sup> important factor with  $RII=0.74$  in overall rank too

**Economic conditions and instability group**

As shown in Table 8, this group was considered by both types of contractors' higher important in markup decision. Both types of contractors had the same attitude in the most two important factors in this group. The political environment, security situation and the cargo crossing point situation was considered the most important factor with  $RII=0.78$  within this group in bid/no bid decision by small contractors and the 11<sup>th</sup> important factor in overall rank. It was also ranked by medium contractors as 11<sup>th</sup> important factor with  $RII=0.82$  in overall rank and the second important factor within the group. The same factor was ranked by both types of contractors as the first important factor within the group in markup decision; it was considered by medium contractors as the most important factor with  $RII=0.87$  in overall rank in markup decision and the second important factor with  $RII=0.85$  in overall rank in the same decision. It is clear that such big constraint in the construction industry influence the contractors whatever their size since the shortage of materials because of closure of cargo crossing points and security instability affect the work of every size.

Another important factor considered by both types of contractors but it vary significantly according to company size was stability of exchange rates in the country, the medium contractors considered it more important in both decisions than smaller contractors. Small contractors ranked it as 24<sup>th</sup> important factor in overall rank in bid/no bid decision with  $RII=0.72$  and medium contractors ranked it as ninth important factor in overall rank with  $RII=0.83$ . In markup decision, smaller contractors ranked it as seventh important factor in overall rank with  $RII=0.74$  and medium contractors ranked it as third important factor in overall rank and second important factor within the group with  $RII=0.82$ . It is clear that the larger size of projects involve more risk in instability of exchange rates and also some of the clients use local money for small projects.

The other factors in this group were ranked at the same level of importance by both types of contractors but medium contractors assigned them higher importance scores. This reveals that the medium contractors consider the economic conditions and instability more serious than smaller contractors



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due to the big risk that can be involved in larger projects and because of dealing with larger and international clients. The total results of this group illustrate that there are direct proportion between the economic conditions and the size of the company. The small contractors ranked this group in bid/no bid decision as 11<sup>th</sup> important group with RII=0.64 and medium contractors ranked it as eighth important group with RII=0.73. in markup decision small contractors ranked it as fifth important group with RII=0.66 and medium contractors ranked it as third important group with RII=0.75.

### **Availability of resources within the region group**

As shown in Table 9 this group was considered by both types of contractors as low important group in both decisions. The attitude of both types of contractors was not varied significantly in most of the factors included in this group. This refer to the fact that for smaller contractors they usually work in specific region so they do not face such problems and costs of transportation of materials and labors, and the enough resources and good capacity of medium contractors with limited area of Gaza Strip made them not considering this group high important. In other words, every type of contractors has their own reasons to consider this group low important which cause the same final results.

One of the factor which were considered significantly higher by medium contractors was availability of the required materials within the region and that might refer to the fact that larger contractors usually depend on larger materials suppliers which may be not in every region of the work, however, smaller contractors do not depend on specific suppliers because of limited amount of materials needed for their work and in Gaza Strip prices of construction materials are almost the same in all regions. Availability of required labor within the region was one of the factors which was ranked higher by smaller contractors but not with large difference in importance score, it was ranked by small contractors as 46<sup>th</sup> important factor in overall rank in bid/no bid decision with RII=0.66 and the 61<sup>st</sup> important factor in overall rank by medium contractors with RII=0.70. in markup decision, it was ranked as 40<sup>th</sup> important factor with RII=0.63 and medium contractors ranked it as 13<sup>th</sup> important factor with RII=0.67.

Conditions of using local materials was ranked higher by small contractors, it was ranked as 59<sup>th</sup> important factor in bid/no bid decision with RII=0.63

**Table 8. Economic conditions and instability**

Factors description	Bid/No Bid						Markup Size					
	Small			Medium			Small			Medium		
	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank
Risk due to inflation rate of tender currency (&inflation compensation methods)	0.62	3	64	0.71	3	58	0.60	4	58	0.72	3	37
Risk due to the current inflation rate in the country	0.61	4	66	0.69	4	64	0.60	3	53	0.71	4	40
Stability of exchange rates in the country	0.72	2	24	0.83	1	9	0.74	2	7	0.82	2	3
Monetary and fiscal policy of the government against economic fluctuations	0.49	5	91	0.60	5	87	0.51	5	85	0.62	5	76
The political environment, security situation and the cargo crossing point situation	0.78	1	11	0.82	2	11	0.85	1	2	0.87	1	1
Total	0.64		11	0.73		8	0.66		5	0.75		3

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**Table 9. Availability of resources within the region**

Factors description	Bid/No Bid						Markup Size					
	Small			Medium			Small			Medium		
	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank
Availability of required labor within the region	0.66	1	46	0.70	1	61	0.63	1	40	0.67	1	55
Availability of the required materials within the region	0.58	4	71	0.68	2	68	0.56	4	74	0.64	3	71
Availability of required plants and equipments within the region	0.60	3	67	0.63	4	84	0.57	3	69	0.62	4	76
Conditions of using local materials	0.63	2	59	0.64	3	81	0.62	2	42	0.65	2	62
Total	0.62		14	0.66		14	0.59		11	0.64		13

and as 81<sup>st</sup> important factor in overall rank with RII=0.64. In markup size decision, small contractors ranked it as 42<sup>nd</sup> important factor with RII=0.62 and medium contractors ranked it as 62<sup>nd</sup> important factor with RII=0.65. This refer to the fact that small contractors usually depend on local material to finish their work, so they ranked it higher than medium contractors, but also results reveals that medium contractors scored it higher than small contractors but with lower rank sue to the fact that there are many factors more important than it. The group was ranked by small contractors as 14<sup>th</sup> important group with RII=0.62 in bid/no bid decision and as 11<sup>th</sup> important group with RII=0.59 in markup decision. It was ranked by medium contractors as 14<sup>th</sup> important group with RII=0.66 in bid/no bid decision, and 13<sup>th</sup> important group with RII=0.64 in markup decision.

**Laws and government regulations in construction group**

Table 10 illustrate that even the group was considered low important in both decisions by both types of contractors, but the considerations of both types of contractors were varying significantly in most of the factors and in the total results of this group. However, there were few factors in this group which were considered at the same level of importance by both types of contractors. Tax policy of the government in the country was ranked by small contractors as the first important factor within this group in bid/no bid and markup decisions with RII=0.58 and RII=0.65 respectively. It was considered by medium contractors as the second important factor in bid/no bid and markup decision with RII=0.68 and RII=0.70 respectively, the medium contractors assigned it higher and considered it more serious, this result was expected because the larger contractors have more complex relation with government regarding the tax subject due to the larger size of works and the multiple works usually done by them, the small contractors have not small number of projects for private sector in which they usually do not need to submit any clearness documents from the government as public sector require from contractors.

The medium contractors considered the freedom of importing materials as the first important factor within this group in both decisions, even the smaller contractors ranked it as second important factor within this group but it was clear that the medium contractors considered it much more serious. The medium contractors ranked it as 44<sup>th</sup> important factor with RII=0.62 in overall rank in bid/no bid decision and the smaller contractors ranked it as 74<sup>th</sup> important factor with RII=0.52 in same decision. Less difference but relatively large is clear between the two types of contractors in markup decision regarding the freedom of importing materials. The medium contractors ranked it as 45<sup>th</sup> important factor with RII=0.61 in

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overall rank and small contractors ranked it as 49<sup>th</sup> important factor with RII=0.61. It is seen that this factor was one of the factors that was influenced by the size of the contracting firm which was an expected result since smaller contractors usually depend on local supply materials due to relatively small amount of materials needed for their projects.

One of the factors that also scores and ranks of it vary significantly according to the company size was the amount of use of unregistered labor within the market, it was ranked by medium contractors as fourth important factor with RII=0.64 in bid/no bid decision within this group and the 79<sup>th</sup> important factor in same decision in overall rank. The smaller contractors ranked it as sixth important factor with RII=0.46 in bid/no bid decision within the group and considered it as one of the last five important factors regarding the same decision in this research, it was ranked as 92<sup>nd</sup> important factor in overall rank. In markup decision, there was also significant difference between the two parties, medium contractors ranked it as 54<sup>th</sup> important factor with RII=0.67 and small contractors ranked it as 86<sup>th</sup> important factor with RII=0.51. It is clear that the number of labor in the work site, the size and type of the project playing main role in this decision, the larger projects have more stable procedures for registration requirements. In the local market, there is a kind of projects which are aimed for job creations and usually larger contractors awarded this kind of projects because smaller contractors can not fulfilling the requirements of the clients of such projects.

Polices and legislation regards licenses, permits, approvals in the country was one of the factors that assigned by both types of contractors at same level of importance in both decisions. It is clear that smaller contractors gave it priority in rank which refer to the fact that some of the projects done by them are private works and they usually help the clients in this subject, however, in public works the clients cover such requirements. The policies and legislation regarding minimum wage rates within the country was ranked to be the last important factor by both types of contractors in both decisions, it was ranked 94<sup>th</sup> important factor in bid/no bid decision by small and medium contractors with RII=0.45 and RII=0.49 respectively. In markup decision, small and medium contractors assigned it as 94<sup>th</sup> important factor in overall rank among the 94 factors investigated in this study with RII=0.45 and RII=0.49 respectively which are the same results of bid/no bid decision. The inconsiderable importance of this factor by both types of contractors refers to the fact that such low and regulations have no application in Gaza Strip.

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**Table 10. Laws and government regulations in construction**

Factors description	Bid/No Bid						Markup Size					
	Small			Medium			Small			Medium		
	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank
licensing policies and legislation related to licenses, permits, and approvals in the country	0.53	3	84	0.53	6	93	0.48	5	90	0.51	6	92
laws related to claims and disputes within the country	0.52	5	87	0.58	5	89	0.57	3	69	0.58	4	86
policy of the government in the country	0.58	1	71	0.68	2	68	0.65	1	29	0.70	2	45
licensing policies and legislation regarding minimum wage rates in the country	0.45	7	94	0.49	7	94	0.45	7	94	0.49	7	94
amount of use of registered labor within the country	0.46	6	92	0.64	4	79	0.51	4	86	0.67	3	54
full application effectiveness of competitive tendering in construction projects	0.53	3	84	0.64	3	76	0.47	6	91	0.58	5	87
freedom of importing materials	0.58	2	74	0.74	1	44	0.61	2	49	0.70	1	45
Total	0.52		16	0.62		15	0.53		15	0.61		15

## **Factors Considered in Bidding Decisions**

### **Competition group (considering only the current project)**

As shown in Table 11, all of the factors included in this group were around the average of this group which reflects the importance of every single factor in it. This group was considered as high important group, it was ranked by both types of contractors as third important group in bid/ no bid decision but with higher importance score for medium contractors (RII=0.80) and the relative importance index (RII) for small contractors was 0.74. There was also obvious different in the importance scores in the markup decision but same attitude in the rank. Small and medium contractors ranked this group as fourth important group in the 16 groups investigated in this research with RII=0.67 and RII=0.75 respectively. It is can be seen that both types of contractors considered this group more important in bid/no bid decision than markup decision. These results was expected since both types of contractors have the same objective which is rewarding the contract, however, the larger projects usually have harder competitive environment among the competitors which was clear in the importance scores of the medium contractors.

When all of the four factors included for both decisions are investigated separately, a better comparison can be made between the two different sizes of contractors. It is seen that medium contractors assigned more emphasis on the specified factors in both decisions.

Small contractors selected the factor availability of prequalification for contractors in the tender as the first important factor with RII=0.77 in bid/no bid decision while medium contractors assigned the same factor as second important factor with RII=0.80 with slightly higher importance score. The same factor was considered average important factor by both types of contractors in markup decision in both the ranks and the scores but with obvious importance different for the medium contractors. It was ranked by small contractors as 25<sup>th</sup> important factor in overall rank with RII=0.66 and medium contractors ranked it as 23<sup>rd</sup> important factor in overall rank in markup decision with RII=0.74, and both types of contractors ranked it as third important factor within the group. This reveals that this factor considered high important factor and not depend on the size of the company but with more serious study by medium contractors.

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**Table 11. Competition (considering only the current project) for small and medium contractors**

Factors description	Bid/No Bid						Markup Size					
	Small			Medium			Small			Medium		
	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank
The possible number of competitors passing the requirements	0.76	2	13	0.81	1	14	0.70	2	14	0.76	1	14
The desire of qualified contractors to bid and win the project	0.71	3	26	0.79	3	24	0.73	1	9	0.76	2	17
Availability of prequalification for contractors in the tender	0.77	1	12	0.80	2	21	0.66	3	25	0.74	3	23
The method of bidding (open tender, special invitation, ... etc)	0.71	4	26	0.79	4	25	0.59	4	59	0.72	4	38
<b>Total</b>	<b>0.74</b>		<b>3</b>	<b>0.80</b>		<b>3</b>	<b>0.67</b>		<b>4</b>	<b>0.75</b>		<b>4</b>



## **Factors Considered in Bidding Decisions**

The medium contractors selected the factor related to the possible number of competitors passing the requirements as the most important factor in bid/no bid and markup decisions with RII=0.81 and RII=0.76 respectively, and considered it as the 14<sup>th</sup> important factor in overall rank in both decisions too. The small contractors almost have the same attitude in the rank of this factor, in bid/no bid and markup decisions they ranked it as second important factor with RII=0.76 and RII=0.70 respectively which are slightly lower importance scores than medium contractors. This reveals that both types of contractors studying the situation of the other competitors and their ability to fulfill the requirements of the client, which means that this factor has no strong correlation with the size of the company. It is interesting that the attitude of both types of contractors almost the same in the rank of the factor related to the desire of qualified contractors to bid and win the project regarding the bid/no bid decision but with significant higher score assigned by medium contractors. The same factor was assigned by both types of contractors with very slightly difference in importance score but with significant rank attitude. The medium contractors ranked it as 17<sup>th</sup> important factor with RII=0.76 in overall rank and the small contractors ranked it as ninth important factor with RII=0.73 in overall rank in markup decision. These reflect the fact that the small contractors consider it very serious in markup decision.

### **Category 3: Market conditions related factors**

In this section the market conditions category was investigated under two main groups which are "competition (considering only the current market conditions)" and "strategic considerations" which is further divided into four subgroups which are "Foreseeable future market conditions and firm's financial situation", "client (considering long-term gains/losses)", "project (considering long-term gains/losses)" and "consultant firm (considering long-term gains/losses)". The purpose of this section is to identify the attitude of small and medium size contractors towards the specified groups.

#### **Competition group (considering only the current market conditions)**

Table 12 illustrates that the importance of this group considered according to the company size. The medium contractors considered the factors included in the group and the final result of group higher than smaller contractors which is reasonable due to the harder competitive environment. The medium contractors ranked this group as the fifth important group with RII=0.74 in bid/no bid decision, and as the sixth important group with RII=0.72 in markup decision. Small contractors ranked it as seventh

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important group in both decisions and significantly lower than medium contractors they ranked it as seventh important group in bid/no bid and markup decisions with  $RII=0.67$  and  $RII=0.72$  respectively. These results were expected since the larger contractors working in multiple projects environment; however, small contractors usually concentrate in a single project due to their size and capacity, and the market conditions are changeable with time.

Amount of the profitable projects currently in the progress within the market was considered as the most important factor within this group by both types of contractors for both decisions. In markup decision, Small and medium contractors ranked it as seventh important factor in overall rank with  $RII=0.74$  and  $RII=0.80$  respectively, however, the smaller contractors considered it higher important in bid/no bid decision, they ranked it as sixth important factor in overall rank with  $RII=0.79$  and medium contractors assigned it as 17<sup>th</sup> important factor with  $RII=0.81$ . It is clear that small contractors usually concentrate in one tender only and can not bid in many tenders at the same time so they select the tender to bid in very carefully and also it might be that smaller contractors do not want to be involved in bidding costs because the capability of the company is limited. However, larger contractors might be able to tender at many projects at same time so they ranked it lower than smaller contractors. Both types of contractors in the case they decide to bid in the work consider this factor almost at the same level of importance.

The level of winning offers mark-up in recent times in the market was considered higher by medium contractors in both decisions and ranked higher than smaller contractors in markup decision. it was ranked by small contractors as 49<sup>th</sup> important factor in overall rank with  $RII=0.65$  and as 51<sup>st</sup> important factor with  $RII=0.72$  by medium contractors. In markup decision, small contractors ranked it as 42<sup>nd</sup> important factor with  $RII=0.62$  and medium contractors ranked it as 29<sup>th</sup> important factor with  $RII=0.73$ . That refers to the fact that medium contractors might bid in more than one tender at the same time and this factor may affect their final decision in markup decision, whereas, the smaller contractor usually be very careful when deciding the markup since it may usually be more difficult for them to deal with different market conditions due to their limited capability.

### **Foreseeable future market conditions & firm's financial situation group**

This group is one of the groups that studied under the title of strategic considerations. Table 13 illustrates that medium contractors considered this group more serious than small contractors in both decisions. This group was

## **Factors Considered in Bidding Decisions**

ranked by medium contractors tenth important group with RII=0.73 for bid/no bid decision and as the fifth important group with RII=0.72 in markup decision. The small contractors ranked it as tenth important group with RII=0.73 in bid/no bid decision, and the ninth important group with RII=0.62 in markup decision. The results show significant importance scores between the two parties. This is clear indication that larger contractors taking strategic considerations more than smaller contractors into consideration in bidding decision process. When the factors included in this group studied separately, it is seen that the scores and ranks vary significantly in each type of contractors. Medium contractors assigned higher scores for all of the factors included in the group.

In bid/no bid decision, there was adjustment between the two types of contractors in ranking of two factors within the group and similarity in overall rank in these two factors which are "amount of possible upcoming profitable projects out for tender in near future" which was ranked by small contractors as 37<sup>th</sup> important factor in overall rank with RII=0.68 in bid/no bid decision and medium contractors ranked it as 36<sup>th</sup> important factor with RII=0.75 in same decision and it was ranked as second important factor within the group by both types of contractors. In markup decision small contractors ranked it as 29<sup>th</sup> important factor with RII=0.65 and medium contractors ranked it as 34<sup>th</sup> important factor with RII=0.72. These results reveal that both types of contractors following up the market and they can have information about upcoming projects in near future and that affect their bidding decisions.

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**Table 12. Competition (considering only the current market conditions)**

Factors description	Bid/No Bid						Markup Size					
	Small			Medium			Small			Medium		
	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank
Amount of the profitable projects currently in the progress within the market	0.79	1	6	0.81	1	17	0.74	1	7	0.80	1	7
The level of winning offers mark-up in recent times in the market	0.65	3	49	0.72	3	51	0.62	2	42	0.73	2	29
Possible workloads of your major possible competitors during the project period	0.66	2	46	0.72	4	55	0.60	3	53	0.64	4	64
Threats due to new entrants into the market increasing competitiveness	0.56	4	77	0.73	2	49	0.57	4	66	0.71	3	44
Total	0.67		7	0.74		5	0.63		7	0.72		6

## Factors Considered in Bidding Decisions

The ratio of the firm's current market share to the expected or aimed share, was ranked by small contractors as 79<sup>th</sup> important factor in overall rank with RII=0.55 in bid/no bid decision, medium contractors assigned it as 76<sup>th</sup> important factor with RII=0.64 and both types of contractors assigned it as fourth and last important factor within the group. In markup decision, there was clear difference in the rank of this factor between the two types of contractors. Small contractors ranked it as 82<sup>nd</sup> important factor with RII=0.52 and medium contractors ranked it as 64<sup>th</sup> important factor with RII=0.64. This factor reflects the fact that both types of contractors do not have long-term plan to aim share in the market, and this may refer to unstable market conditions in local construction market.

### **Client group (considering long-term gains/losses)**

As shown in Table 14, the results of this group give indication that both types of contractors consider it significantly higher in bid/no bid decision than markup decision. Small contractors ranked this group as sixth important group with RII=0.67 in bid/no bid decision and as the 14<sup>th</sup> important group in markup decision with RII=0.56. Medium contractors ranked it as fourth important group with RII=0.75 in bid/no bid decision and 11<sup>th</sup> important group with RII=0.68 in markup decision. It is also clear that medium size contractors considered this group more serious than smaller contractors. This reveals that medium contractors have stronger and more respective relations and prestige with clients than smaller contractors which was expected result.

Both types of contractors selected the relationship between the company and the decision makers in the owner's institution and the possibility of solving problems that may occur during work as the most important factor in both decision, smaller contractors ranked it as second important factor in markup decision with RII=0.58 and as 64<sup>th</sup> important factor in overall rank, medium contractors ranked it as first important factor within the group with RII=0.75 and as 22<sup>nd</sup> important factor in overall rank. In bid/no bid decision, small and medium contractors assigned it as first important factor within the group with RII=0.73 and RII=0.81 respectively, small contractors ranked it as 21<sup>st</sup> important factor in overall rank and medium contractors assigned it as 16<sup>th</sup> important factor. This give indication that both types of contractors depend The small contractors selected the factor related to the client's general procedures to awarding the contract to be the most important factor with RII=0.60 in markup decision within this group. The purpose for that is the fact that these contractors consider their size and they think that clients usually prefer larger contractors, however, medium contractors ranked it as 51<sup>st</sup> important factor with RII=0.69 and small contractors ranked it as 52<sup>nd</sup>

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**Table 13. Foreseeable future market conditions & firm's financial situation**

Factors description	Bid/No Bid						Markup Size					
	Small			Medium			Small			Medium		
	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank
Market's direction (weather it is declining, expanding, etc)	0.65	3	54	0.77	1	30	0.66	1	25	0.77	1	12
Amount of possible upcoming profitable projects out for tender in near future	0.68	2	37	0.75	2	36	0.65	2	29	0.72	3	34
Existing financial conditions indicating a financial risk in near future	0.69	1	34	0.74	3	42	0.65	2	29	0.77	1	12
The ratio of your firm's current market share to the expected or aimed share	0.55	4	79	0.64	4	76	0.52	3	82	0.64	4	64
<b>Total</b>	0.64		10	0.73		10	0.62		9	0.72		5

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important factor. The other factors in this group were not varied significantly between the two sizes of contractors in the rank but it is clear that medium contractors considered them more important than smaller contractors, this reveal that medium contractors have more strategic considerations and plans to their companies with client which is reasonable.

### **Project group (considering long-term gains/losses)**

It is clear in Table 15 that both the scores and the ranks for both decisions in most of the factors vary significantly according to the company size. This group was considered low important group especially in markup decision. It was ranked by small contractors as ninth group with RII=0.64 in bid/no bid decision and as 12<sup>th</sup> important group with RII=0.58 in markup decision. Medium contractors ranked it as 11<sup>th</sup> important group with RII=0.72 in bid/no bid decision and 14<sup>th</sup> important group in markup decision with RII=0.63. It is clear that both types of contractors considered this group more important in bid/no bid decision than markup decision and medium contractors considered it more important than smaller contractors. This reveals that both types of contractors have specific strategic considerations regarding the project in bid/no bid decision, however, both can not consider the risk of that when they decide the markup size. Smaller contractors selected the factor related to possible contribution in building long-term relationship with other key parties as the most important factor in bid/no bid decision with RII=0.73 and the medium contractors ranked it as second important factor with RII=0.78 in the same decision.

on the identity of the client while deciding to bid or not to bid, medium contractors consider it high important when deciding the markup size.

The larger contractors assigned the factor related to project's possible contribution to increase the contractor firm's classification as the first important factor in bid/no bid decision with RII=0.83 and as the tenth important factor in overall rank in the same decision whereas, small contractors assigned it as 29<sup>th</sup> important factor in overall rank in bid/no bid decision with RII=0.71. These results seem to be reasonable since the larger contractors usually depend on public works which need better classification to be awarded new jobs. However, smaller contractors have some works for private sector so they are looking for to build new and long term relationship with some clients. Even though, both types of contractors do not consider these factors high important in markup decision since the general prices lately in the local market and the markup recently specified by contractors do not allow the contractors to consider such factors or any strategic considerations in the markup decision.

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**Table 14. Client (considering long-term gains/losses) for small and medium contractors**

Factors description	Bid/No Bid						Markup Size					
	Small			Medium			Small			Medium		
	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank
Amount of work the client carries out regularly	0.67	2	42	0.76	3	35	0.58	3	65	0.71	2	43
The amount of repeat business level that the client	0.65	4	49	0.77	2	28	0.56	4	72	0.67	4	55
The client's possible effect by giving recommendations in referral markets	0.63	5	60	0.67	5	72	0.49	5	89	0.59	5	85
The relationship between the company and the decision makers in the owner's institution and the possibility of solving problems that may occur during work	0.73	1	21	0.81	1	16	0.58	2	64	0.75	1	22
The client's general procedures to awarding the contract	0.67	3	42	0.75	4	39	0.60	1	52	0.69	3	51
<b>Total</b>	<b>0.67</b>		<b>6</b>	<b>0.75</b>		<b>4</b>	<b>0.56</b>		<b>14</b>	<b>0.68</b>		<b>11</b>



## **Factors Considered in Bidding Decisions**

Another factor which improve that contractors especially medium contractors consider this group more serious in bid/no bid decision was project's possible contribution to increase the firm's identity and brand strength, it was ranked by small contractors as 49<sup>th</sup> in bid/no bid and markup decision with RII=0.65 and RII=0.61 respectively. However, medium contractors ranked it as 28<sup>th</sup> important factor with RII=0.77 in bid/no bid and as 53<sup>rd</sup> important factor in markup decision with RII=0.68. The factors which were related to have new markets for work were ranked higher by small contractors which was expected result since smaller contractors looking forward to join new markets to have better job, and to enlarge their companies. These factors were "possible contribution in increasing firm's market share and dominance in market"," contribution in maintaining long-term relation with important influence market" and "project's possible contribution to break into a new market with productive future" .The other factors in this group were ranked by both types of contractors almost at the same level of importance but with significantly difference in the scores between them in both decisions.

### **Consultant firm group (considering long-term gains/losses)**

This group as shown in Table 16 was considered as the lowest important group by small and medium contractors in markup decision with RII=0.53 and RII=0.57 respectively, and the last important group in bid/no bid decision by medium contractors with RII=0.61; it was ranked by small contractors as the 15<sup>th</sup> important group with RII=0.60 among the 16 groups investigated in this study. The relationship between the company and the decision makers in the consultant's institution was ranked as the most important factor within this group in bid/no bid decision by small and medium contractors with RII=0.68 and RII=0.69 respectively. The small contractors ranked it as 37<sup>th</sup> important factor in overall rank whereas, medium contractors ranked it as 63<sup>rd</sup> important factor in overall rank in same decision. In the markup decision the medium contractors selected it as the most important factor within the group with RII=0.62 and ranked it as 79<sup>th</sup> important factor in overall rank. The smaller contractors ranked it as second important factor with RII=0.53 and ranked it as 81<sup>st</sup> important factor. It is well known that some of the private clients depend on their consultants to prepare the bid, that's why the smaller contractors selected it to be the first important factor, however, in public works consults usually responsible for technical works only.

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**Table 15. Project (considering long-term gains/losses) for small and medium contractors**

Factors description	Bid/No Bid						Markup Size					
	Small			Medium			Small			Medium		
	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank
Project's possible contribution to increase the contractor firm's classification	0.71	2	29	0.83	1	10	0.59	5	61	0.66	2	58
Project's possible contribution to increase the firm's identity and brand strength	0.65	5	49	0.77	3	28	0.61	2	49	0.68	1	53
Possible contribution in increasing firm's market share and dominance in market	0.64	6	57	0.69	6	64	0.55	7	76	0.61	7	81
Possible contribution in building long-term relationship with other key parties	0.73	1	19	0.78	2	26	0.60	4	53	0.63	5	74
Contribution in maintaining long-term relation with important influence market	0.69	4	34	0.71	5	57	0.61	2	49	0.66	4	61
Project's possible contribution in improving your firm's staff expertise	0.54	9	82	0.65	7	75	0.54	8	79	0.62	6	76
Project's possible contribution to break into a new market with productive future	0.71	2	29	0.74	4	42	0.61	1	46	0.66	2	58
Contribution to firm's future due to value of the completed project to the public	0.55	8	79	0.62	9	85	0.52	9	82	0.55	9	90
Possible Contribution to the firm's internal market (employee's satisfaction, etc)	0.57	7	76	0.64	8	76	0.56	6	72	0.60	8	83
Total	0.64		9	0.72		11	0.58		12	0.63		14

## **Factors Considered in Bidding Decisions**

The amount of construction work the consultant has been regularly was ranked by small and medium contractors as second important factor in bid/no bid decision with RII=0.59 and RII=0.60 respectively. The small contractors rank it in markup decision as first important factor with RII=0.55 and as 76<sup>th</sup> important factor in overall rank, medium contractors assigned it as second important factor with RII=0.57 and as 89<sup>th</sup> important factor in overall rank. It is clear that smaller contractors consider this factor in ranks more serious than medium contractors due to the facts that sometimes in some small projects consultant have key decision in selecting the contractor with client, however, in large projects usually consultant do not have the same role. It is clear that both types of contractors do not consider the consultant's possible effect by giving recommendations in referral markets as important factor in both decisions, this refer to the fact that most of clients do not as for such recommendations in bidding.

### **Summary of all groups**

When the values for bid/no bid and markup decisions presented in Table 19 investigated, it is observed that all of the groups investigated in this study received higher scores from medium-sized contractors, which is an indication that medium-sized contractors are taking both decisions more seriously during both decisions. The most significant differences are in the groups' related to strategic considerations, for markup decision, which is another indication that medium-sized contractors have longer term plans for their companies than smaller contractors. As shown in Table 17, it is seen that small and medium contractors ranked the project related category as the most important category in markup decision with RII=0.643 and RII=0.712 respectively. In bid/no bid decision, the same category was ranked by small contractors as second important category with RII=0.663 and medium contractors assigned it as first important category with RII=0.734.

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**Table 16. Consultant firm (considering long-term gains/losses) for small and medium contractors**

Factors description	Bid/No Bid						Markup Size					
	Small			Medium			Small			Medium		
	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank	RII	Rank within group	Overall rank
The amount of construction work the consultant has been regularly	0.59	2	69	0.60	2	88	0.55	1	76	0.57	2	89
The consultant's possible effect by giving recommendations in referral markets	0.53	3	86	0.55	3	91	0.51	3	86	0.51	3	92
The relationship between the company and the decision makers in the consultant's institution and the possibility of solving problems that may occur during work	0.68	1	37	0.69	1	63	0.53	2	81	0.62	1	79
Total	0.60		15	0.61		16	0.53		16	0.57		16

## **Factors Considered in Bidding Decisions**

The firm related category was assigned by small and medium contractors as the second important category in markup decision with  $RII=0.615$  and  $RII=0.670$  respectively, the same category was ranked as first important group by small contractors in bid/no bid decision with  $RII=0.665$  and as the second important group by medium contractors with  $RII=0.725$ . The last category was the market condition. Small and medium contractors assigned it as the last important category in both decisions. The specified categories assigned significantly higher than smaller contractors. It is seem to be reasonable because of difference in financial capability and experience difference between the two types. In the bid/no bid decision, the attitudes of both contractors are different. Small contractors considered the firm related category as the most important category and the project related category as the second and the opposite is done by medium contractors. This reveals that the medium contractors have more stable companies and they concentrate in the project itself to decide to bid/or not to bid, however, smaller contractors still in the stage of building their firms. Both contractors considered the market related category as the last important one since it is something that they can not control at the same time they have to find work for their companies.

### **Conclusion**

In this research the factors influencing bid/no bid and markup size decisions were investigated to the overall contractors surveyed which were 77 contractors. The contractors then classified according the company size to small size contractors which were 25 contractors out of the 77, and medium size contractors which were 52 contractors the objective of this classification was to test the relationship between the company sizes and bid/no bid and markup size decisions.

**Table 17. Importance rates and ranks of the groups for bid/no bid and markup size decisions**

NO.	Group's description	Bid/No Bid				Markup Size			
		Small		Medium		Small		Medium	
		RII	Rank	RII	Rank	RII	Rank	RII	Rank
Firm related factors									
1	Need for work	0.66	8	0.71	12	0.60	10	0.65	12
2	Strength of the firm	0.67	4	0.74	7	0.63	8	0.69	10
	<b>Total</b>	<b>0.665</b>	<b>1</b>	<b>0.725</b>	<b>2</b>	<b>0.615</b>	<b>2</b>	<b>0.670</b>	<b>2</b>
Project related factors									
3	Project conditions contributing to profitability of the project	0.77	1	0.81	2	0.71	2	0.75	2
4	Project uncertainty	0.67	5	0.74	6	0.68	3	0.71	7
5	Job complexity	0.64	12	0.73	9	0.58	13	0.70	8
6	Risk creating job contract conditions	0.62	13	0.69	13	0.65	6	0.70	9
7	Client and consultant of the project	0.75	2	0.83	1	0.72	1	0.80	1
8	Economic conditions and instability	0.64	11	0.73	8	0.66	5	0.75	3
9	Availability of resources within the region	0.62	14	0.66	14	0.59	11	0.64	13
10	Laws and government regulations in construction	0.52	16	0.62	15	0.53	15	0.61	15
11	Competition (considering only the current project )	0.74	3	0.80	3	0.67	4	0.75	3
	<b>Total</b>	<b>0.663</b>	<b>2</b>	<b>0.734</b>	<b>1</b>	<b>0.643</b>	<b>1</b>	<b>0.712</b>	<b>1</b>
Market conditions									
12	Competition (considering only the current market conditions)	0.67	7	0.74	5	0.63	7	0.72	6
13	Foreseeable future market conditions & firm's financial situation	0.64	10	0.73	10	0.62	9	0.72	5
14	Client ( considering long-term gains/losses)	0.67	6	0.75	4	0.56	14	0.68	11
15	Project (considering long-term gains and losses)	0.64	9	0.72	11	0.58	12	0.63	14
16	Consultant firm (considering long-term gains and losses)	0.60	15	0.61	16	0.53	16	0.57	16
	<b>Total</b>	<b>0.644</b>	<b>3</b>	<b>0.710</b>	<b>3</b>	<b>0.584</b>	<b>3</b>	<b>0.664</b>	<b>3</b>

## **Factors Considered in Bidding Decisions**

In bid/no bid decision, there were 6 factors out of the most 10 important factors considered heavily in bid/no bid decision by small, medium contractors and these factors were, "the current financial capability of the client", "project size (total bid value)", "financial status of the company", "the donor of the project", "terms of payment" and "project type". The other important factors stated by small contractors to be from the most 10 important factors were "amount of the profitable projects currently in the progress within the market", "the current financial situation of the company", "completeness of fulfilling to tender conditions imposed by the client" and "the current workload of projects, relative to the capacity of the firm". The medium size contractors stated some other factors to be from the most 10 important factors which are, "the history of client's payment in past project", "the client's attitude, characteristics and stability in needs", "stability of exchange rates in the country", and "project possible contribution to increase the contractors firm's classification". It was observed that the factors that both types of contractors agreeing with each others on them are the factors either related to the client of the project or to the market. However, the other factors considered by small contractors were related to the company size considerations. The medium contractors considered the factor related to economic conditions or to the client of the project.

In the markup size decision, there are some factors which considered very important by small and medium contractors these are, "allowed project duration being enough", "the political environment, security situation and the cargo crossing point situation", "terms of payments", "stability of exchange rates in the country", "the amount of changes expected throughout the execution of this project" and "amount of the profitable projects currently in the progress within the market". The small contractors consider some other factors which not considered from the most 10 important factors by medium contractors which are "project size", "confidence you have in cost estimate of your firm's estimators in this project", "the desire of qualified contractors to bid and win the project", and "the current workload of projects, relative to the capacity of your firm". The medium contractors considered some other factors regarding the markup decision these are, "the current financial capability of the client", "the penalty conditions for not being able to complete the project on time", "the client's attitude, characteristics and stability in needs" and "the history of client's payment in past project". This is an indication that the responding contractors of different sizes have different approaches to both of the decisions in bidding

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process. Small contractors are advised to have joint venture with some success larger contractors to improve their managerial and experience and to reduce the financial risk in the project, which will help them to inter new market of work and to be involved and bid in larger and new types of projects in the future. Local contractors are advised define their objectives for long-term especially these related to the strategic considerations with clients, consultants, and employees. The findings of this research are important for contracting companies in formulating their bidding strategies and also for researchers in developing a practical model for bidding decisions.



## Factors Considered in Bidding Decisions

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