

A MODEL VALUE FRAMEWORK FOR BIDDERS' EVALUATION AT TENDERING STAGE

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Abstract

There are weaknesses in the existing tendering procedure that could be used against project delivery. A few publications studies that specifically address the causes of these exploitations (such as money theft, false billing, etc.). The main reason which is related to the negative effect on the projects is the finance bid report. It is a very important index for bidders' evaluation. It presents vexing problems during the selection process and the evaluation. The approach is neglecting the financial factors at the early stages, which depends on the value approach that talks about the function and quality over the cost. So that, the study aims to draw and model the value framework for bidder's evaluations. The study limitation is only at the technical factors at the construction projects, which presents the function and quality without focusing on the costs and financial factors for the bidders. The study showed the principles of bid evaluation and it analyzed the procedures for all technical factors. The discussion part of the study depended on the bid's experts to weight the technical factors based on the values strategies via a policy of the questioners. The study modeled the value framework for bids evaluations via detailed tables for the technical and sub-technical factors classified and weighted with the scoring system. Finally, it presented the outcomes main pillars at the conclusion and recommendations for further studies about the field.

Keywords

Bidders; Value; Technical Factors; Tendering; Evaluation.

1. Introduction

The public buildings and the construction projects are usually executed by the government, the selection and evaluation of contractors play an essential part and require careful consideration. therefore, the government organizations and the investors are responsible for the success of the construction process, contractor evaluations and selection are essential and vital. (Xiaohong Huang, 2011).

To ensure the success of a project, selecting qualified contractors is essential. Tendering procedures should take a place based on planned principles and objectives due to comprehensive regulations and tendering ethics. However, the tendering process has many constraints and issues because it involves multiple stakeholders and new technology. (Adnan E. and Sami N., 2010).

The financial issues always play a vital factor and influence directly on the decision makers. for that, it is important to guarantee the fair evaluation based on the rational scientific path. The value approaches work to raise the quality and functionality over the cost. The quality and function at the tendering process are the technical factors for the projects. which means that the initial evaluation for the bidders must be enough fair to evaluate all the technical factors and its details based on the value approach. (Banki M.T., Esmaeeli B., Ravanshadnia M., 2022).

Based on the above findings, the study crystalized the main aim is a model value framework for bidders' evaluation at tendering stages. The research presents that theoretical analysis is the principle for bid evaluation. It summarizes the main road to specify the clear technical factors. These technical factors played and crystalized the roadmap for the value framework for the evaluation.

On the other hand, The Value Strategies are developed at some pillars. The value studies almost discuss three essential words: "function, quality

and the cost."

Many studies published at this filed specially to elaborate the relations and interaction between them at many different cases of the projects.

The new development policies are to add more value index which is the quality over the cost. Certainly, the cost and the financial terms determine many of paths for the construction industry. That means, the investors and the government organization need more guidelines or roadmap to determine the priorities terms to get the right path. Lately, the value of money shoots in the direction of investing in many different fields. The construction industry definitely needs a call of the value approaches at all the stages of the projects life cycle. Mainly, the tendering stage as an early stage does not take in consideration the value aspects. (Chhabra, J. and Tripathi B., 2014).

2. Materials and Methods

2.1. Bid Evaluation

Bid evaluation's main aim is to identify the lowest price and to submit before the date and time of the bid closing demonstrated in the bidding agreement. (Alexander S., Bee Lan O., 2013)

The lowest priced bid may or may not be the best evaluated significantly acceptable bid. A logical, systematic evaluation procedure is covering all aspects of the evaluation process as specified in the bidding document. This should be followed in order to determine accurately the significantly adaptable bid according to the terms and conditions of the bidding document.

In contracts several goods, works, or services must be provided, it might be necessary to achieve a balance between cost and quality to meet intended development goals. (Chien-Liang L., Wei L., Min-Ren Y., 2003)

2.2. Principles of Bid Evaluation

There are certain principles and practices of a bid evaluation that must be clearly understood and followed: (Ajayi, O.M. And Ogunsanmi, O.E. 2012)

1- Instant Public Bidding Opening

The timing for opening bids must align with the deadline for bid submission or occur instantly after.

Protecting the integrity of the bid submission is essential to encourage transparency right from the beginning of the bid review process.

2- Confidentiality of Procedures

No information regarding the examination, clarification, and evaluation of bids, as well as recommendations regarding awards, after the public opening of bids, to communicate to any

involved person is not official with these procedures until the successful bidder is selected for the contract award. (Alexander S., Bee Lan O., 2013)

3- Priority of Documents

The Guidelines/Regulations state that the bidding document and the financing agreement regulate the rights and responsibilities of the executing Agency. And the same for the bidders who are offering to supply goods to execute the work for a specific procurement activity under a project. The rules and regulations of that bidding document define the procurement procedure after it has been issued for a specific contract. If there is a conflict between the bidding document and this Guide for a certain procurement, the bidding document shall take precedence.

4- Bid clarification

After the bids are opened, no bidder will be able to modify it. The executing agency will

only consider requests for clarifications that have no effect on the scope or cost of the bid.

Both the clarification request and the bidder's response must be sent written or via an acceptable electronic method (such as e-mail with scanned documents). (Ajayi, O.M. And Ogunsanmi, O.E. 2012)

5- Rejection of Bids

All received and valid bids shall be evaluated according to the standards, techniques, and procedures.

Only those bids that do not substantially fulfill the specifications, bidder qualifications, and other requirements of the bidding document may be rejected, as stated in the bidding document.

6- Currency of Bid Assessment

For evaluation and comparison purposes, bid prices expressed in many currencies must be converted into a single currency, by using the selling exchange rates recommended for similar transactions on the current day and from a trusted source (such as the central bank) specified in the bidding.

7- Qualifications and Achievement Experience of Bidder

Unless expressly specified in the bidding document, the evaluation only takes consideration of the qualifications and history of the bidder itself and neglects the Bidder's subsidiaries, parent corporations, affiliates, or subcontractors. The bidding document may let specialized suppliers or manufacturers obtain the necessary skills for a few vital elements or activities. (Drew D. S., Lo H. and Skitmore R., 2001)

8- Increased Period of Bid Validity

Before the deadline for bid validity, the executing agency shall do all its best to complete bid evaluation and contract award.

Only extraordinary circumstances may result in the extension of a bid's validity. All bidders who have not withdrawn their bids will be asked to extend the validity of their bids if it is determined during the evaluation process that it is necessary. It is not acceptable for bidders who are willing to extend the validity of their bids to change the scope or value of their offers. The duration of their bid securities or bid securing declarations must be extended. However, the bid securities of bidders whose bids are not extended in time

9- Rejection of All Bids

When the submitted bids are not significantly responsive for the function progress and value aspects, it is appropriate to reject all of them.

After presenting the principles of bid evaluation the following table shows the comparison between the current traditional method and the proposed model. This table clears the research limitation in the technical factors under the qualifications and achievement experience of bidder principle which is able to apply the value strategies on it.

Table 1 The comparison between the current traditional method and the proposed model

Principles of Bid Evaluation		Current Model		Proposed Model	
Instant Bidding	Public Opening	Applied	Doesn't need to be weighted	---	---
Confidentiality of Procedures		Applied	Doesn't need to be weighted	---	---
Priority of Documents		Applied	Doesn't need to be weighted	---	---

Principles of Bid Evaluation		Current Model		Proposed Model	
Bid clarification		Applied	Doesn't need to be weighted	---	---
Rejection of Bids		Applied	Doesn't need to be weighted	---	---
Currency of Bid Assessment		Applied	Doesn't need to be weighted	---	---
Qualifications and Achievement Experience of Bidder		Applied	Doesn't need to be weighted	Applied	The research scope (Value Model)
Increased Period of Bid Validity	Pe-riod of Bid Va-lidity	Applied	Doesn't need to be weighted	---	---
Rejection of All Bids		Applied	Doesn't need to be weighted	---	---

2.3. Bid Evaluation Procedure

The value evaluation process provides all bidders a fair and transparent competitive environment to produce an effective and accurate result.

The bid evaluation process consists of five separate processes that must be carried out in a proper order.

Unless otherwise stated, this section essentially outlines the process for a single-stage, one-envelope bidding procedure that comes after post qualification. To meet the requirements of different types of contracts and bidding procedures, the evaluation procedures can be modified.

Table 2 The technical factors (sub-factors) and the corresponding weights

(Source: Asian Development Bank. 2018)

Technical Factors	Weights in percentage
1- Approach, Methodology and Organization - Understanding the Project.	15
2- Construction Requirements.	25
3- Construction Management.	25
4- Management Systems.	25
5- Key Personnel	10

The bid evaluation process consists of five technical factors as follows: (Adnan E. and Sami N., 2010)

1-Approach, Methodology and Organization - Understanding the Project.

2- Construction Requirements.

3- Construction Management.

4- Management Systems.

5- Key Personnel

1- Approach, Methodology and Organization - Understanding the Project.

This part is including three terms to define the methodology for the bidder. Each term contents many aspects must be taken into consideration as follow:

- **Design:** The design must include the proposed designers, along with the locations where the design work would be done and the assigned scope of work. It is very necessary to suggest designers for specialized parts.

Designers' accessibility overcomes the project's life, especially during the defect's notification period.

Each proposed design entity should submit a quality assurance plan. The design aspects must explain how to submit documents from the contractor for approval or

evaluation. It also should clarify the process for managing design interactions with manuals related works by other contractors. These instructions for providing operation and maintenance. (Xiaohong Huang, 2011)

- **Construction:** The construction term must mention the method statement for the construction Activities. In addition to the resources under the main contractor such as labors, equipment, plants, materials and subcontractors. It must clarify the procedure for the construction management mainly which related to another contractor. Finally, the risk management and the contingency ratio must be calculated.
- **Program:** using the most recent software, a Work Breakdown Structure, and the Critical Path Method. (Xiaohong Huang, 2011) The sequence in which the work will be completed, with each activity restricted to a single trade or operation and connected to the next by suitable logical relationships, rather than set dates. It is very necessary to present the critical activities, interfaces, limitations, associated deadlines, and the order of testing operations scheduling.

2- Construction requirements

The construction requirements are different from one project to another. The study presented the generic items or terms that are most common in the construction projects. (Banki M.T., Esmaeeli B., Ravanshadnia M., 2022)

The bid must include all requirements which are related to fully completed the all the project activities.

- **The civil work** should cover the earth moving such as bulldozer, backhoe, wheel loader, dump truck and portal air compressor. The different transportation equipment such as

cargo truck, water sprinkler truck and hydraulic crane.

The drilling and grouting works are necessary equipment such as boring machine, grout pump and grout mixer. (Jennings E. and Holt G., 1998)

The concrete production and handling are including all parts for applying the concrete works. The concrete plant consists of concrete mixing station, truck mixer. Concrete pump truck, concrete bucket, truck crane and concrete pump and other equipment such as engine generator. (Egemen M. and Mohamed A., 2007)

- **The Architectural and utility works** are including many types or many issues based on the function of project. The main terms must be checked at the architectural and utility works in order to determine all needs and tools. The study cannot list all the equipment mainly it's not fixed for the construction process. But it's very necessary to be the efficient, effective, safe, quick, and on-time completion of the project. This can be feasible by the proper use of appropriate equipment. Any architectural and utility works process will lack without the use of construction equipment. Owning every piece of construction equipment needed for the project isn't needed or affordable for the contractor. (Mohammad S. El-Mashaleh, 2012)

- **Mechanical, Mechanical, Electrical and Plumbing (MEP) works** also have a huge variety at the functions. Each project has a special requirement according to the standards and codes. The efficient, effective, safe, quick and on-time completions are main factors to evaluate the bidders.

3- Construction Management

The study classified the construction management

into five aspects as follows:

- **Health, Safety Environment & Security (HSES)**

HSES should cover different areas concerning the project conditions and the circumstances which effect it.

The main item is an approach and method statement for managing HSES. Not Only the fixed method for managing but the construction project usually needs continuously improving. The bidder must explain by details the job plan for the HSES. The plan should consist of the persons that can assign the project's management of the HSES and their assigned time frame. All details are related to complete the project under all certain and uncertain cases. (Skitmore R., Martin S., 2004)

- **Quality Assurance / Quality Control (QA/QC)**

QA and QC are playing the roadmap to provide the project guarantee. QA and QC proposals should cover all project stages and activities (design, procurement, construction, Defects Notification Period). Also, they must include a proposal for the executed activities by the main contractor, the sub-contractors and suppliers of goods and materials. The QA and QC must propose the job plan, assign the person and the duration of the project. (Waara F. and Bröchner J., 2006)

- **Risk Management**

The risk terms are playing an active role at the bidders by applying the methodology and strategy. The project management risks propose the project anticipate hazards and the plan to address them.

Proposed Risks determine all details such as the number of employees who will be assigned to risk management and how long

they will be assigned to the project. The contingency and the additional cost which covered the risk analysis. All these data are playing a vital value index for the bidder. (Egemen M. and Mohamed A., 2007)

- **Stakeholder Engagement**

The bidder presents a proposed strategy for the involved stakeholders who's affected by the project.

The number of people who will be assigned to the project's stakeholder engagement and how long they will be there. The staff members who will be assigned to the project's stakeholder engagement. (Xiaohong Huang, 2011)

- **Interface Management**

It means to create interfaces for the management shape and consider how to manage them. In construction interfaces and the management strategy the Manager is the one who will be assigned to interface management and determine the tasks.

- **Program Management**

The program must present the methodology and the proposal to guarantee an effective programming and delivering on time. Identify the risks in the program and how to plan and mitigate them. Finally, the personal who will be assigned to program management and how long they will stay on the project. (Skitmore R., Martin S., 2004)

4- Management Systems

The management systems presented four aspects. These aspects are related to the procedure, operation and productivity rates. (Mohammad S. El-Mashaleh, 2012)

- **Progress of the Works**

The progress must be proposed as a clear document to follow-up the productivity. The construction projects usually need monthly monitoring. At some special projects needs

weekly control. It should be mentioned at the tender invitations. The requirements for that a monthly progress report and Form of a monthly assessment of the workers and supplies of the contractor at the site.

- **Plans and Procedures**

This part needs all documents related for the project activities and procedures. The plan for managing contracts and related registrations, the procedure for submitting, reviewing, and/or approving documents from the contractor. The Plan for managing insurance, including adherence to terms and conditions, claims notification processes, and premium payments. Procedures for obtaining permits, licenses, and approvals, as well as communicating with the appropriate authorities and third parties. Finally, the process for handling reported problems, maintaining, reviewing, and monitoring project records. (Waara F. and Bröchner J., 2006)

- **Payments**

The steps for gathering and submitting applications for interim payments, along with any accompanying documentation. The breakdown of the Contract Price, which is unpriced in the Technical Proposal, is intended to assist with the evaluation of progress payments and price changes. (Jennings E. and Holt G., 1998)

- **Operation & Maintenance**

This includes the Plan for operation and maintenance staff training. The Execution plan for Experimental Working Period (Tests on Completion). The Execution plan for the tests after Completion.

5- Key Personnel

The key personnel need the detailed information

about the key persons. The details such as appropriateness for the position (relevant education, training and experience in the sector, relevant work history with the employer and the timetable that is expected for the job. The main Key personnel are:

- Representative
- Design Manager
- Senior Civils Works Designer
- Senior Building Works Designer
- Senior Track Works Designer
- Senior Systems Designer
- Construction Manager - Buildings & Civils Works
- Construction Manager - Track Works
- Construction Manager - Systems
- Interface Manager
- Testing & Commissioning Manager
- HSES Manager
- QA/QC Manager



Fig. 1 The Bid Evaluation Procedure chart
(Source: Analysis by Author)

3. Materials and Discussions

The study analyzed and presented all the technical factors of the bid's evaluation process at the methods part of the research.

The materials and discussion will show and present it to get a value framework for bid's evaluations. The research discussion was classified to two parts.

The first part presents the expert's questionnaire results to get more accurate weighted for the technical and the sub- technical factors as shown at the methods part of the study.

The second part will explain the scoring systems based on the pointed weight systems and methodologies.

3.1. Weight the technical factors

The study developed the value framework by evaluating and weighting all the technical factors. The creation process for weighting it via tendering experts. The study was applied on the 4 experts in order to provide weights for each sub-technical factor. The distribution of questionnaires followed the standards established by the validation processes. (Ahmad I. and Minkarah, I., 1988)

The discussion had been analyzed within the previous history experience for many tendering evaluations. The research can summarize the questionnaires' s results as shown in the table below.

Table 3. Weight the technical factors - questionnaires's results

(Source: Analysis by Author)

Technical Factors	Sub- Technical Factors	Expert Results No.				Average (%)
		1 (%)	2 (%)	3 (%)	4 (%)	
Approach	Design	30	40	25	45	35
	Construction	30	50	25	55	40
	Programme	30	20	20	30	25
Cons. requirements	Civil Work	20	35	25	40	30
	Architectural (MEP) works	65	40	45	50	50
		10	15	30	25	20
Construction Management.	HSES	20	10	20	10	15
	QA/QC	15	15	30	40	25
	Risk	10	10	20	20	15
	Stakeholder	5	20	10	5	10
	Interface	20	10	10	20	15
Management systems.	Program	10	15	30	25	20
	Progress	15	20	30	35	25
	Plans	25	30	45	40	35
	Payments	25	30	15	10	20
	Operation	15	20	30	15	20
Key Personnel	Representative	15	10	20	15	15
	Design M.	10	10	5	15	10
	S. Civils	3	7	4	7	5
	S. Building	3	8	3	5	5
	S. Track	3	5	5	8	5
	S. Systems	7	4	5	5	5
	Construction M.	4	7	3	7	5
	Cons. Track M.	6	5	5	3	5
	Cons. System M.	5	3	8	5	5
	Planning M.	15	5	10	10	10
	Interface M.	15	10	5	10	10
	Testing M.	10	5	10	15	10
	HSES M.	3	7	7	4	5
QA/QC M.	8	3	5	5	5	

3.1. Scoring system

A scoring model is a technique for determining a relative score for one or more tasks. Scores for potential projects can be calculated by teams using scoring models that take into account costs, risks, and possible revenues.

The study chooses the criteria which is most relevant to the tendering process. It will affect the results depending on their type and weight. A project manager or the main stakeholders can help in this process by providing a survey or template to enable each respondent select the most important elements, even if the highest-level decision makers will ultimately decide which criteria are most important. (Ahmad I. and Minkarah, I., 1988)

Table 4. Scoring System

(Source: Ahmad I. and Minkarah, I., 1988)

Description	Score
The information submitted is comprehensive and relevant in all material respects.	4
The information submitted is good and relevant in most material respects, but is lacking or inconsistent in some minor respects.	3
The information submitted is good and relevant in parts, but is lacking or inconsistent in some material respects.	2
The information submitted contains significant shortcomings and/or inconsistencies.	1
No information is submitted.	0

3.2. Value Framework for Bid Evaluations

The study modeled the bid's evaluation value framework by integrating the main technical factors and the sub-technical factors via the expert ratios. This evaluation will help and increase the decision makers to get more value index for the bidders.

The evaluation measure only the technical factors. It does not present or evaluate the finance factors as mentioned in the research limitation.

The study modeled the value framework via detailed tables for the technical and sub-technical factors classified and weighted with the scoring system as mentioned. (A) means the maximum points available. (B) means the points scored by the tendering managers based on the scoring systems. $(C) = (B)/(A)$ to calculate the item score (%). (D) is the item weight (%) which presents the expert questionnaires' s result. Finally, the total score can be calculated by $(C)*(D)$.

As shown in the below tables 05, 06,07,08,09 and 10 presented the bid's evaluation value framework.

Table 5. Approach, Methodology and Organization - Understanding the Project.
(Source: Analysis by Author)

CRITERION	REQUIREMENT	Points Available [A]	Points Scored [B]	Item Score (%) [C]	Item Weight (%) [D]	Total Score (%) [C]*[D]
Design	proposed designers for the assigned scope of work.	4				
	Proposed designers for specialist elements	4				
	Quality assurance plan.	4				
	Documents submission from the contractor for approval or evaluation.	4				
	The process for managing design	4				
	Instructions for providing operation and maintenance manuals.	4				
	Designers' accessibility at notification period.	4				
	Total Marks	28		35%		
Construction	Method statements for significant constructing activities.	4				
	Key resources	4				
	Management of construction with other contractors.	4				
	Risk management and the contingency ratio	4				
	A comprehensive description of how the Works will be done.	4				
	Total Marks	20		40%		
Programme	Using the most recent software	4				
	The sequence of works	4				
	The critical Activities	4				
	Total Marks	12		25%		

Table 6. Construction requirements
(Source: Analysis by Author)

CRITERION	REQUIREMENT	Points Available [A]	Points Scored [B]	Item Score (%) [C]	Item Weight (%) [D]	Total Score (%) [C]*[D]
Civil Work	Earth Moving	4				
	Transportation Equipment	4				
	Quality assurance plan.	4				
	Drilling and Grouting works	4				
	Concrete Production	4				
	Other Equipment as needed	4				
	Total Marks	24		30%		
Architectural and utility works	Efficient	4				
	Effective	4				
	Safe	4				
	Quick	4				
	On-time completion	4				
	Total Marks	20		50%		
(MEP) works	Efficient	4				
	Effective	4				
	Safe	4				
	Quick	4				
	On-time completion	4				
Total Marks	20		20%			

Table 7. Construction Management.
(Source: Analysis by Author)

CRITERION	REQUIREMENT	Points	Points	Item	Item	Total
		Available	Scored	Score	Weight	Score
		[A]	[B]	(%)	(%)	(%)
				[C]	[D]	[C]*[D]
Health, Safety Environment & Security (HSES)	Approach and method statement	4				
	Approach to continuously improving	4				
	HSES Plan.	4				
	HSES Manager	4				
	Total Marks	16		15%		
Quality Assurance / Quality Control (QA/QC)	Proposals to cover the stages of project.	4				
	Proposals for works to be executed by the Contractor.	4				
	Proposals for works to be executed by Subcontractors.	4				
	Proposals for suppliers of materials.	4				
	QA/QC Plan.	4				
	QA/QC Manager .	4				
	Total Marks	24		25%		
Risk Management	Approach and methodology for risk management.	4				
	Project risks and how mitigation.	4				
	Risk allocated	4				
	Risk Manager .	4				
	Total Marks	16		15%		
Stakeholder Engagement	Approach for engaging with stakeholders involved in the project.	4				
	Approach for engaging with stakeholders affected by the project.	4				
	Stakeholder Manager .	4				
	Total Marks	12		10%		
Interface Management	Design interfaces	4				
	Construction interfaces	4				
	Interface Manager .	4				
	Total Marks	12		15%		
Program Management	Methodology to ensure efficient programming.	4				
	Programme risks identified	4				
	Program Manager .	4				
	Total Marks	12		20%		

Table 8. Management systems.

(Source: Analysis by Author)

CRITERION	REQUIREMENT	Points Available [A]	Points Scored [B]	Item Score (%) [C]	Item Weight (%) [D]	Total Score (%) [C]*[D]
Progress of the Works	Monthly Progress Report	4				
	Monthly records of Contractor's Personnel and Equipment	4				
Total Marks		16			25%	
Plans and Procedures	Contract management plan	4				
	Procedure for submission, review and/or approval of Contractor's Documents.	4				
	Strategy management plan.	4				
	Insurance management plan	4				
	Procedures for obtaining permits, licences and approvals and liaising with relevant authorities and third parties.	4				
	Procedure for dealing with notified defects.	4				
	Procedure for the retention, inspection and audit of project records.	4				
Total Marks		28			35%	
Payments	Procedure for compiling and submitting payment applications.	4				
	Breakdown of the Contract Price	4				
Total Marks		8			20%	
Operation & Maintenance	Training plan and maintenance personnel.	4				
	Execution plan for Working Period (Tests on Completion).	4				
	Execution plan (Tests after Completion).	4				
Total Marks		12			20%	

Table 9. Key Personnel part 01
(Source: Analysis by Author)

CRITERION	REQUIREMENT	Points Available [A]	Points Scored [B]	Item Score (%) [C]	Item Weight (%) [D]	Total Score (%) [C]*[D]
Contractor's Representative	Position appropriateness	4				
	Relevant work history	4				
	Job timetable	4				
Total Marks		12			15%	
Design Manager	Position appropriateness	4				
	Relevant work history	4				
	Job timetable	4				
Total Marks		12			10%	
Senior Civils Works Designer	Position appropriateness	4				
	Relevant work history					
	Job timetable	4				
Total Marks		8			5%	
Senior Building Works Designer	Position appropriateness	4				
	Relevant work history	4				
	Job timetable	4				
Total Marks		12			5%	
Senior Track Works Designer	Position appropriateness	4				
	Relevant work history	4				
	Job timetable	4				
Total Marks		12			5%	
Senior Systems Designer	Position appropriateness	4				
	Relevant work history	4				
	Job timetable	4				
Total Marks		12			5%	
Construction Manager - Buildings & Civils Works	Position appropriateness	4				
	Relevant work history	4				
	Job timetable	4				
Total Marks		12			5%	

Table 10. Key Personnel part 02
(Source: Analysis by Author)

CRITERION	REQUIREMENT	Points Available [A]	Points Scored [B]	Item Score (%) [C]	Item Weight (%) [D]	Total Score (%) [C]*[D]
Construction Manager - Track Works	Position appropriateness	4				
	Relevant work history	4				
	Job timetable	4				
	Total Marks	12		5%		
Construction Manager - Systems	Position appropriateness	4				
	Relevant work history	4				
	Job timetable	4				
	Total Marks	12		5%		
Planning Manager	Position appropriateness	4				
	Relevant work history					
	Job timetable	4				
	Total Marks	8		10%		
Interface Manager	Position appropriateness	4				
	Relevant work history	4				
	Job timetable	4				
	Total Marks	12		10%		
Testing & Commissioning Manager	Position appropriateness	4				
	Relevant work history	4				
	Job timetable	4				
	Total Marks	12		10%		
HSES Manager	Position appropriateness	4				
	Relevant work history	4				
	Job timetable	4				
	Total Marks	12		5%		
QA/QC Manager	Position appropriateness	4				
	Relevant work history	4				
	Job timetable	4				
	Total Marks	12		5%		

5. Conclusions and Recommendations

The following parameters regarding the bidding strategy have been identified as follow:

1- On the Tendering level:

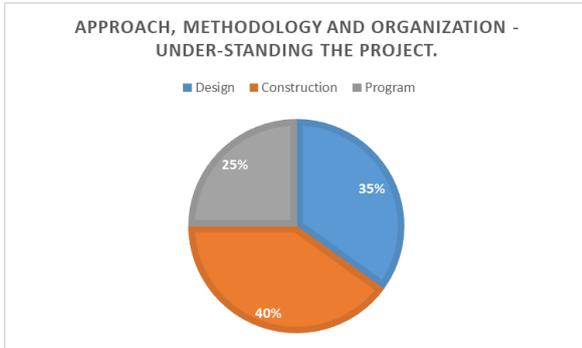
The study presented the model of the value framework for bidders' evaluation at tendering stages that applied all-technical factors which are related to most construction projects. The study urges the decision makers review all factors at their projects and add any special requirements based on their specifications.

The proposed model value framework can be summarized as follow

- Approach, Methodology and Organization - Understanding the Project.

Fig. 2 Approach, Methodology and Organization - Understanding the Project chart

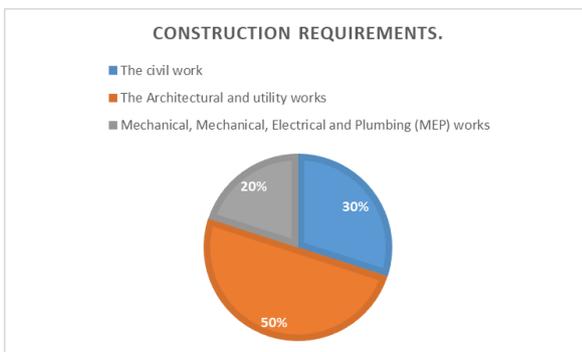
(Source: Analysis by Author)



- Construction Requirements.

Fig. 3 Construction Requirements chart

(Source: Analysis by Author)



- Construction Management.

Fig. 4 Construction Management chart

(Source: Analysis by Author)



- Management Systems.

Fig. 5 Management Systems chart

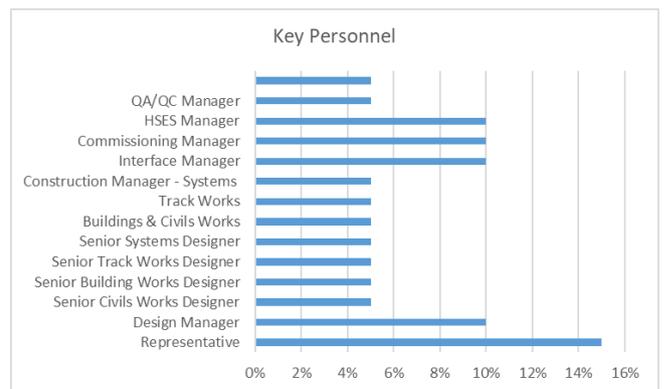
(Source: Analysis by Author)



- Key Personnel

Fig. 6 Key Personnel chart

(Source: Analysis by Author)



- 2- On the general level:
- The selection of a contractor is determined by a significant quantity of factors. It is not easy to satisfy all the factors at the same language. The study presented the generic factors which are repeated in most of the construction projects.
 - One of the critical and vital important decisions is the right selection and evaluation of the contractor.
 - The most important goal that is tightly linked during the procedure for value's evaluation is to get the value bids and results that meet the customers' objectives and demands.
 - The study urges the tendering department to rearrange all factors especially the technical factors based on the project style and its requirements.
 - The value evaluation of contractor must consider a wide range of factors such approach, methodology, organization, understanding the Project. In additional, the construction requirements, Construction management, management systems and key personnel.
 - The study encourages applying the values strategies at early stages from the life cycle projects. It will attract the local and foreign investors to push more and more at construction industry.
 - Increase the contractors' abilities to get and win the right project by establishing an official government organization. which can present new regulations for the contractors, apply training programs, classify them to levels...etc. It will give a positive effect to draw a right bidders based on the main target without any favours.

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