Research Article

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Procurement challenges analysis of Iraqi construction projects

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Abstract: Public procurement in Iraq plays an essential function in the development and recovery of the country's economy as well as providing the essential infrastructure for the growth of the private sector. The Coalition Provisional Authority's Government Procurement Legislation No. 87 (2004) is the final procurement law in effect in Iraq. Preparations are underway for new procurement legislation as of Oct. 2021. The objective of the paper is to determine the effectiveness of the public procurement process used in a construction project in Iraq, there is also a lack of procurement methods and policy consistency between government agencies. procurement techniques, tender documentation information, Advertising deadlines, and document management procedures, for example, vary amongst federal contracting agencies. Furthermore, there is no mandatory process for the definition and disclosure of tender evaluation criteria, providing room for subjectivity in the tender award process. This paper's major conclusion that is competitive tendering is open to everyone, tendering is not mandated as Iraq's general rule, despite the fact that it is considered best practice elsewhere. Direct invitation techniques are widely used in the construction project process tendering of Iraq and if not adequately managed, they can lead to bias, fraud, and corruption.

Keywords: Public procurement, challenges, procurement methods, Iraqi constructions

1 Introduction

According to government procurement is defined as a purchase of products, services, and construction firms' Iraqi government operating via Ministries or government entities, governmental units such as Regions and Governorates, and any other entities of the Iraqi state that have the authority to spend public funds, in the Coalition Provisional Authority's Order No. 87 (2004) Public Procurement Law. Project procurement is defined as an organized approach, process, or procedure that allows clients to buy or acquire building materials [1]. Construction project procurement does have a broad reach since it requires bringing together and arranging a huge number of different individuals, corporations, and companies to plan, oversee, and build construction goods for specific customers or "customers" such as residences, commercial complexes, shopping centers, bridges, highways, and other structures. The organizational framework necessary to plan and develop building projects for a particular customer, per the end-user or client, is known as project procurement. In some ways, it's correct because the process of a customer "obtaining" a building entails bringing together such a set of people and arranging them properly in terms of their functions, duties, and interrelationships. In addition to the conventional approach, the construction industry now employs a variety of "fast-tracking" or "creative procurement" processes all over the world [2].

In terms of duties, activity Project delivery sequence, process, and procedure, as well as organizational approach, the various procurement systems differ from one another. These variances have always had an impact on the project's success. Project performance can be defined as "the level of achievement of a certain effort or undertaking" [3]. It has something to do with the project specifications declared aims and priorities [4].

The purpose of this research is to explore how different procurement procedures influence the outcomes of the project. Because there are so a variety of projects, it's difficult to keep track of them all. It's advisable to limit this research to the most common Iraq's procurement systems, for example, standard, design-build, contract Construction management, and management are two different types of management. This study is motivated by the idea that the procurement methods are chosen, the construction project procurement system is made up of these elements [5]. That

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has an impact on the structure of the project delivery system as shown in Figure 1.

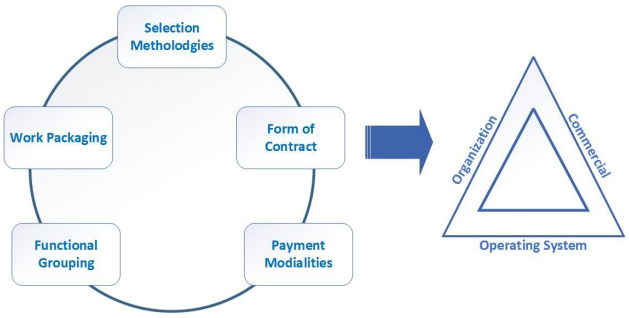

Figure 1: The procurement and delivery mechanisms for projects are intertwined

2 Factors affecting procurement system selection

The project performance criteria were examined through [6] using the severity index method, the following factors were considered: construction cost, construction time, quality of the completed project, as well as worker health and safety, technological level, and environmental friendliness Contractor flexibility; workforce dependency; construction group/team/ team quality; contractor project management; and contractor workforce capacity. According to [7–10], the criteria that were used were as follows: used to assess customer needs and expert opinions on each procurement method's advantages and disadvantages performance: Certainty (cost/price frames) and speed (throughout the stages of design and construction), as well as flexibility in accommodating changes: knowledge of how much the customer must pay at every stage of the construction phase); knowledge of how much the clients must pay at each stage of the construction phase); understanding of how much the consumer must spend at each stage of the project Complexity (customer may specify a specific subcontractor or perform a buildability analysis); performance (contractors' reputation, aesthetics, and design confidence): Risk allocation and mitigation; accountability (program completion, pricing, product quality, design, and construction); price competitiveness (encompassing issues such as cost of maintenance, competitive bidding, and good value); and disputes and arbitration..

3 Iraq methodology of traditional procurement

According to [11], the provisions of Clause 1/Section, 14/Order of the Coalition Provisional Authority (Dissolved) No. 87 for the year 2004 issued the Instruction No 1 for 2014 Instructions on Executing Government Contract that included Contracting Methods in section three as follows:

3.1 General tender

This strategy will be implemented by issuing a global tender to all interested parties. in participating in the execution of all types of contracts, who meet the conditions for participation. The procedures, in applying this method, shall be general, fair, competitive, open, and clear, and shall take into consideration the financial ceilings approved in the Instructions on the Execution of Government Budget.

3.2 Limited tender

When commodities, consulting services, or contracts are involved, this strategy is used. to which the goods, consulting services, or contracts are subject of the tender are available with limited, as to competent, bodies for the purpose of submitting their offers according to the specifications, designs, and conditions set up by the contracting bodies. It shall be made through an announcement to all those interested in participation through submitting their offers, and who meet the conditions of participation, for a price.

3.3 General contract with the technical qualification method

This method is made through the announcement of the tender to all those who are interested in participation through submitting their technical and commercial offers, in two separate envelopes.

3.4 Tender in two phases

This method is implemented in the following two phases. The implementation of this method the pre-qualification procedure could be used before it. initially. This method is used in the contracts where it is difficult for the contracting body to set up their technical specifications or designs

and in the contract of sophisticated technology and the specialized contracts of advanced scientific nature

3.5 Direct invitation

This method is implemented through serving, free of charge, a direct invitation to at least three (3) contractors, suppliers or consultants, who are known for their rationality, ability, as well as technical and financial capabilities, to carry out official body projects and contracts

3.6 Single offer (the only offer)

It is through serving invitation, free of charge, to one competent supplier, contractor, or consultant for contract execution, with the approval by the central committee on reviewing and approval of an award.

3.7 Direct contract

It is done by sending a free invitation within one body to carry out this type of contract, with the consent of the Council Ministers' competent sectoral committee and a recommendation from the central committee on the revision and approval of importation or local contracts for the provision of non-monopolistic goods or services of a specialized nature provided the fulfillment.

3.8 Direct purchase

Direct Purchase from rational manufacturers

3.9 Committees of purchasing

This method is used for providing the government departments with services, goods, and works, as per the regulations stated in the Instructions on the Execution of Federal Budget.

3.10 Amana regulation

The contracting parties, in the event of adopting the implementation method as trust when implementing their projects financed from the current budget or from the investment budget, must take into account the financial ceiling specified for the purposes of implementing this method which does not exceed $170,000, it's similar to cost plus fixed or Force account.

3.11 Direct implementation

Establishment of centrally funded state departments: Execution, installation, maintenance, procurement, and provision of materials and equipment necessary for the implementation the project and the materials and equipment included in it until its operation, examination, and final delivery

According to [12], traditional procurement is appropriate in some situations, such as when a schedule permits for consultant design is required, sample time; and a client wishes to engage designers and contractors separately. Before building begins, price certainty is wanted; product quality is necessary, and a risk balance between both the client and the constructor must be created. systems of Procurement have become a big concern in the construction industry due to two considerations. To begin, the procurement of a construction project comprises a series of interconnected and sequential actions [1]. The procurement method is described as the organization of the complete process of project construction delivery [13]. The importance of focusing procurement strategies on optimizing all project delivery objectives, particularly time, money, and quality, was underlined. Project procurement has remained a difficulty for the design team, subcontractors, and investment businesses under these constraints such as references [14] and [15]. According to the references [16] and [17], the primary varieties of the classical procurement process are bills of definite quantities, bills of approximate amounts, drawings, and specifications. Schedule of rates, expense reimbursement, and labor only The conventional approach is a project procurement process in which the three consecutive stages of concept, bid, and construction are designated as independent activities, as the name implies.

A properly bid contract is what it's known as. This strategy allows all qualified contractors to bid on projects in a competitive, yet non-competitive, setting, much like a competitive market. The client makes the project and writes a written scope statement, stating the project's goals and requesting that the scope definition be verified by the architect [17]. The architect is in charge of establishing the scope so that clear duties can be established and scope project modifications can be tracked with the project team. The design team prepares the entire design documentation before engaging the contractor, which frequently degrades

quality by failing to address buildability, buildability, and life-cycle costing [18–20].

4 Methodology of analysis

Several approaches were considered in order to determine the optimum technique for gathering data in order to make certain that the Benchmark Study added In the Iraqi context, value Information was gathered using sources from Iraqi ministries, particularly the Ministry of Planning, and numerous international organizations working in Iraq. To aid data collecting, we created a draft questionnaire. The draft questionnaire, titled "Procurement Challenge Analysis in Construction of Iraq" was distributed to key stakeholders and experts, as well as being translated into Arabic in order to reach a larger pool of Iraqi specialists. Using a practical sampling technique, A total of 100 (one hundred) questionnaires were distributed to the targeted professions, yielding 73 integers eligible for analysis. The surveys were separated into two parts: the first dealt with the respondents' demographic characteristics, and the second dealt with the performance of various procurement methods used in the Iraqi construction sector. as well as Iraqi control institutions including the Inspector General (internal audit), the Supreme Audit Board (external audit), and the Integrity Commission (anti-corruption agency). On the one hand, responsibilities may overlap affecting methods of procurement.

There are nine major factors to consider when evaluating procurement methods, From the literature, fifteen factors relating to the performance of control institutions were identified, and some were added after they were established through a pilot survey. Interviewees were requested to rank the importance of these criteria on a scale of one to ten. On a 5-point Likert scale, 1 was very low, 2 was low, 3 was neutral, 4 was high, and 5 was very high, with 1 being very low, 2 being low, 3 being neutral, 4 being high, and 5 being very high. The following formula is used to calculate the average rank of a group of people:

$$MS = \frac{\sum (F * S)}{N} \quad (1)$$

Where
MS = Score of mean
F = Frequency of response
S = The score assigned to the criteria, which ranges from 1 to 5
N = The overall number of the respondents.

5 Results and discussion

Table 1 shows the respondents' experience, with 7 percent having 1 to 5 experience years of 25 percent having 6 to 10 experience years, 27 percent having 11 to 16 years of experience, 38 percent having 16 to 20 years of experience in the construction industry, and 38 percent having more than 20 years of experience, indicating that these professionals have current experiences and training in the examined systems. Table 2 shows the analysis of the procurement system that was applied in construction projects in Iraq.

It is fundamental to rate all factors [18] after completing the questionnaires and analyzing the results and gathering data, The objective was for the Table 4 of factors found to be significant and comprehensive and believed that the factors mentioned in this study were appropriate in the setting of Iraq. All factors were classified into three groups, the first group is the "Experience Years of Respondents", the second group is the "Procurement System methods.", the third group is "legislation procedure and process that was applied in construction projects in Iraq". A technique

Table 1: Respondents' years of experience

Years of experience	Response (%)
1-5	7
6-10	25
11-15	27
16-20	38
Above 20	3
Total	100

Table 2: Procurement system methods

No.	Assessment criteria	Mean score
1	General tender	4.5
2	Limited tender	3.1
3	General contract with the technical qualification method	2.3
4	Tender in two phases	3.7
5	Direct Invitation	4.1
6	Single offer	2.2
7	Direct contract	2.9
8	Direct Purchase from rational manufacturers	2.8
9	Purchasing committees	3.1
10	Amana regulation	2.1
11	Direct implementation	2.4

Table 3: Legislation procedure and process that was applied in construction projects in Iraq

No.	Assessment criteria	Mean score
1	Public Procurement Law No. 87 (2004)	2.7
2	Condition of Contracts for Civil Works	3.2
3	Condition of Contracts for Electrical, Mechanical and Process Works	3.6
4	Standard Bidding Documents	4.1
5	Federal Iraqi Budget regulation	4.7
6	Regulations for Implementing Government Contracts, 2014	4.9

Table 4: Factors are listed in order of their importance

No.	Factor	RII	OR (N)
	Procurement methods		
1	General tender	94	1
2	Limited tender	88	3
3	General Contract with the technical qualification method	73	9
4	Tender in two phases	84	4
5	Direct invitation	91	2
6	Single offer	69	10
7	Direct contract	80	6
8	Direct purchase from rational manufacturers	78	7
9	Purchasing committees	81	5
10	Amana regulation	68	11
11	Direct implementation	75	8
	legislation factors procedure		
1	Public Procurement Law No. 87 (2004)	77	6
2	Condition of Contracts for Civil Works	81	5
3	Condition of contracts for electrical, mechanical and process works	84	4
4	Standard bidding documents	88	3
5	Federal Iraqi budget regulation	91	2
6	Regulations for implementing government contracts, 2014	95	1

called relative importance index (RII) was used to determine the grade of these factors based on classification given the transparency. The formula for calculating the RII for each factor is shown in Eq. (2)

$$\text{RII}\,\% = \frac{5(n5) + 4(n4) + 3(n3) + 2(n2) + n1}{5n} * 100 \quad (2)$$

Where N means the total number of responses received, and $n1$, $n2$, $n3$, $n4$, and $n5$ denote the number of responses received in each of the five categories of respondents who chose 5 for "highest rating", 4, for "high", 3, for "neutral", 2, for "low", and 1 for "very low".

Table 4 displays the two groups are ranked, the 11 factors, which are arranged according to their own particular group Show the factors' overall ranking. as well. The three most procurement methods based on the respondents were "General Tender", "Direct Invitation", and "Limited Tender". The least factors had in the four groups "Amana Regulation". It is interesting to note that these factors primarily come under the methods of procurement. The second group shows the legislation 6 factors procedure and process that was applied in construction projects in Iraq.

6 Conclusions

The aim of this research was to analyze the current conceptualizations of the problem for action to modernize Iraq's procurement system. The Proposals are based on talks with contractual entities in Iraq and focus on improving transparency and integrity and accountability of Iraq's public procurement system

- Ensure that effective procurement system guarantees are in place and that they are applied in all tendering and construction projects of Iraq;
- Increasing the capacity of city workers as well as the employees in the contractual department to manage the procurement process; and
- Ensure that control systems are coordinated with existing regulations and applied through each tendering phase.

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