

Evaluation of the Effectiveness of the Standard Bidding Document for Design-Build Contracts in Road and Bridge Projects in Iraq

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ABSTRACT

The implementation of Design-Build contracts within Iraq's Standard Bidding Document (SBD) framework is essential for the enhancement of road and bridge infrastructure. This study assesses the effectiveness of the SBD for Design-Build contracts in reducing cost overruns and schedule delays using a mixed-methods approach that includes a questionnaire survey of 65 professionals, case study analysis of five completed projects, and expert interviews. Survey data revealed agreement on the SBD's efficacy in improving procurement transparency and cost control; however, its ability to address design modifications gained less approval. Case studies validated these findings, indicating that projects with major design changes encountered significant schedule growth, although cost parameters remained consistent in all instances. Interviews identified unforeseen infrastructure conflicts and iterative design adjustments as critical delay factors, highlighting gaps in the SBD's adaptability provisions. The study concludes that while the SBD provides robust financial governance, its rigid structure impedes responsive design management. Future revisions to Iraq's SBD framework must prioritize the integration of dynamic adaptability frameworks, improve risk allocation, and incorporate design-review methods to systematically mitigate emergent complexities and optimize infrastructure delivery outcomes. The findings provide practical insights for infrastructure policy in Iraq, particularly for the Ministry of Planning, responsible for organizing and updating the SBDs, as well as for implementing agencies such as the Ministry of Construction, Housing and Public Municipalities, Roads and Bridges Directorate, and Mayorality of Baghdad. These findings support reviewing key provisions to ensure effective management of design changes, reduce delays, and enhance project implementation efficiency.

Keywords: Standard bidding documents, Design-build contracts, Road and bridge projects, Public procurement.

1. INTRODUCTION

A construction project is a unique process consisting of multiple connected stages, including variables such as external factors (e.g., economic conditions, site nature, climatic, risk and

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hazard levels of the project), project management and delivery methods, procurement strategies and public support (**Klee, 2015**). Each project is unique and has its special characteristics, and varies depending on factors such as project's size, objectives, time, etc. (**Abeyasinghe and Ruwan, 2022**). The client's key success factors must be identified early in the project planning process, and key performance indicators that determine project success should be established (**Abdulhussain and Burhan, 2025**). The success of a project is determined by its ability to meet the client's objectives and to comply with the specified timeline, minimal costs, and to preserve the construction quality (**Abbas and Burhan, 2022; Rauzana and Dharma, 2022**). Road and Bridge Infrastructure are heavy civil construction projects that require huge capital and specialized knowledge to be successful (**Jackson, 2020**). Infrastructure is considered as the linchpin of the economic growth of any nation (**Gupta and Kumar, 2022**), and Road infrastructure is considered the backbone of the transportation system and has a vital role in improving the citizens' quality of life, while inadequate investment in the nation's highways and roads may result in increasing congestion, delays for vehicles, and safety problems (**Ping and Melan, 2012**). Their successful delivery was significantly influenced by managerial and financial practices throughout the project lifecycle (**Yamany et al., 2024**).

The Design-Build method has been implemented for the first time in Iraq's road and bridge projects by using SBD for Design-Build contracts, referring to a significant transformation in project delivery methodology in the country. These documents are prepared to execute the works in the way of designing and building infrastructure projects. This type of contract mandates the contractor to complete the project, which includes preparing designs, equipment manufacturing and supply, execution of works, equipment installation, testing, experimental installation, acceptance of works by the employer, maintenance, and training, all under full responsibility. The Standard Bidding Document for Design-Build Contracts structure is shown in **Table 1**.

Table 1. Standard bidding documents for design-build contracts.

Part	Section	Filled by
Instruction to Bidders	Instruction to Bidders	Ministry of Planning
	Bid Data Sheet	Contracting Entity
	Evaluation and Qualification Criteria	Contracting Entity
	Bid Forms	Bidder
	Eligible Countries	Ministry of Planning
Work Requirements	Work Requirements	Contracting Entity
Contract Conditions and Contract Forms	Contract's General Conditions	Ministry of Planning
	Contract's Special Conditions	Contracting Entity
	Annexes of the Special Conditions of Contract and Contract Forms	Contracting Entity

Delays in the implementation of construction projects commonly occur, resulting in losses for involved parties, especially the owners, who are slow in operating their projects (**Parrangan et al., 2021**). In Iraq, many infrastructure investment projects are included in the government budget every year. Yet, lots of these projects encounter interruption, completion delays, corruption, or other adverse circumstances familiar in Iraqi construction projects (**Burhan and Mahdi, 2024**).



One of the critical managerial decisions in the early stages of any project is selecting a suitable project delivery method, as it directly influences project success, affecting essential indicators of performance such as cost, quality, schedule and safety (Salla, 2020; Ahmed and El-Sayegh, 2021). The main delivery methods of the project are the traditional method or Design-Bid-Build (DBB), Design and Build (DB), and Management, in which either the owner or contractor takes central management control (Ting, 2013; Sherif et al., 2022). The DBB method involves a linear sequence of design and construction with solicitation steps for each, after developing the scope of the project, then signing contracts with design and engineering firms; upon completion of designs and specifications, bid solicitation follows, concluding in the awarding of the construction contract to the qualified contractor with the lowest price (Molenaar and Yakowenko, 2007). In the DB delivery system, the project owner signs a contract with only one contractor for both design and construction of the project (Riksheim and Wondimu, 2020). These contractual relationships provide an advantage in comparison with other construction procurement methods, in that the contractor carries the responsibility for everything (Hughes et al., 2015). Meanwhile, the construction manager provides services as either an advisor to the owner, which is known as (Agency CM) or provides consultancy services to the owner at the design phase and works as a general contractor during the construction phase, which is called (at risk CM) or (CM/GC) (Jackson, 2020). Each project delivery method has advantages and disadvantages, as shown in Table 2.

Table 2. Advantages and disadvantages of project delivery methods.

Delivery Method	Advantages	Disadvantages	Reference
DBB	Greater control for the owner during the design phase. Lower initial costs.	Slower project delivery due to sequential phases. Higher risks for owners due to the separation of design and construction responsibilities.	(Koch et al., 2010; Ahmed and El-Sayegh, 2021; Almuhammad and Ghareeb, 2024)
DB	Faster project delivery by integrating design and construction. Single point of responsibility simplifies management.	Limited design flexibility after contract initiation. Potential compromise on quality due to cost constraints.	(Hughes et al., 2015; Ahmed and El-Sayegh, 2021; Kamoche and Wanyona, 2024)
CM	Flexibility to accommodate design changes during construction. Suitable for large and complex projects.	Higher administrative costs due to reliance on a management contractor. Requires significant coordination among stakeholders.	(Klee, 2015; Ahmed and El-Sayegh, 2021; Migliaccio and Shrestha, 2023)

Numerous factors influence the selection of project delivery methods. Project complexity, owner capability, contractor experience, and market conditions were identified as the most influential criteria in this decision-making process (Zhong et al., 2023). The Design-Build (DB) method is more suitable for highly complex projects and in markets where contractor capabilities are rapidly evolving (Ding et al., 2014). The study (Fathi et al., 2020) confirmed that the effectiveness of DB approach varies significantly with the type and



complexity of the project. This study revealed that while change orders were significantly higher in DB highway projects (4.5%) than those in DB water and wastewater projects (0.43%), they achieved faster time performance, highlighting how technical and operational complexity fundamentally affect DB outcomes. Consistent with this, **(Tran et al., 2018)** analyzed 139 pairs of road projects implemented using the design-build (DB) and design-bid-build (DBB) methods in Florida and were classified into five categories of work types: new construction; reconstruction; resurfacing, restoration, rehabilitation projects; intelligent transportation systems-related projects; and miscellaneous construction. They found that DB projects generally demonstrated superior schedule performance in terms of completion intensity and schedule control, particularly in new construction and reconstruction projects, but this performance was not consistent across the other categories of work types, where no notice advantage was observed in some project categories. Taken together those results support the view that the success of the DB approach is not linked to the methodology itself, but is influenced by project-specific factors, reinforcing the importance of contextual assessment when applying this approach in complex sectors such as road projects in Iraq. In the same context, **(Chen et al., 2016)** conducted an empirical study on 418 projects in the United States implemented using DB method to evaluate the time and cost performance of this method. The findings revealed that more than 75% of the projects were completed within or before the planned timeframe, indicating the good time performance provided by DB method. However, more than 50% of the projects exceeded budgetary constraints. The study also showed that different procurement methods of DB projects have significantly different time performance and that cost performance in DB projects is significantly affected by different owner types and contract methods. These results demonstrate that the procurement strategy and type of contract used in DB projects have a significant role in achieving a balance between time performance and financial control, which requires careful consideration in contexts such as Iraq, where traditional contracting systems remain dominant and lack institutional flexibility.

Project delay indicates the amount of time by which a part of a construction project exceeds beyond initially anticipated timeline caused by unforeseen events **(Zain-Alabdeen and Rasheed, 2022)**. Such delays are a common phenomenon **(Hasan and Burhan, 2025)**, and any unexpected, payable, and/or legally acceptable delays arising from challenges beyond the contractor's control affect project management **(Khairullah et al., 2023)**. In addition to schedule delays, cost overruns are common risks in construction projects. Uncontrolled cost increases investment pressure, raises construction cost, influences investment decision-making, and lowers project feasibility **(El-Ahwal et al., 2016)**. These general causes of delay are exacerbated in the Iraqi context, where structural, institutional and procedural challenges contribute to weakening project implementation efficiency and limiting the ability to deal with changing site conditions. **(Hamza et al., 2022)** pointed out that there's a big weakness in standardizing procurement procedures between government agencies, along with differences in how documents and bids are prepared, and no requirement to disclose bid evaluation criteria, which opens the door to subjective assessments in referral decisions. The study also showed that the use of non-competitive methods, such as "direct invitation" and "sole offer," is common, which increases the likelihood of favoritism and corruption and undermines the principles of transparency and accountability. These structural issues constitute a real obstacle to the implementation of an efficiency- and competition-based procurement model and weaken the ability of SBDs alone to bring about real improvements in project performance. Hence the need for parallel institutional reforms,



including capacity building and strengthening of regulatory and procedural frameworks, alongside improvements in the drafting of the contractual documents themselves.

Although global literature has focused on the benefits of the design-build (DB) approach in terms of improving time performance and cost control, these findings are often based on stable institutional environments and advanced contractual systems. In contrast, local studies in Iraq have addressed issues of delays and public procurement, as well as institutional and implementation challenges, without paying sufficient attention to evaluating the effectiveness of standard bid documents (SBDs) when used in design-build projects, especially in the roads and bridges sector. This study, therefore, seeks to fill this gap by assessing the ability of the SBD to address implementation challenges and control costs and time within DB contracts in the Iraqi environment.

Due to the frequent delays and challenges observed in road and bridge projects in Iraq, this study aims to evaluate the effectiveness of the Standard Bidding Document (SBD) for Design-Build contracts, and its role in enhancing project performance, especially regarding cost control, schedule compliance, and reducing design modifications. Although there are many international studies that have addressed the Design-Build approach, applied studies evaluating the SBDs within the actual Iraqi context remain limited. This study aims to fill this gap by providing a realistic analysis of projects implemented using SBD and offering practical recommendations that contribute to the development of these documents in a way that enhances the success of future infrastructure projects, especially in environments that face complex institutional and field challenges.

2. METHODOLOGY

This study adopts an integrative mixed-methods approach combining desk research, expert interviews, a structured questionnaire, and case study analysis. The desk research involved reviewing previous studies on procurement and project delivery methods, with a particular focus on Design-Build contracts and Standard Bidding Documents implemented in Iraq. The integration of mixed methodologies holistically bridges theory and practice, critically analyzing contractual mechanisms, operational challenges, and sectoral consensus in infrastructure procurement.

2.1 Research Design

To uphold methodological rigor, this study implements a convergent parallel mixed-methods design, characterized by the simultaneous yet independent collection and analysis of quantitative and qualitative datasets. Structured questionnaires administered to key industry stakeholders yield standardized metrics on prevailing perceptions of SBD implementation efficacy, while parallel in-depth expert interviews and granular case study examinations uncover contextualized insights into the causal dynamics linking contractual inflexibility to project performance variances.

2.2 Data Collection Methods

Data collection integrated surveys, expert interviews, and case studies. Structured questionnaires assessed industry professionals' perceptions of SBD effectiveness. Semi-structured interviews with practitioners revealed operational challenges, while case studies of Design-Build projects analyzed links between SBDs and outcomes like cost/schedule



overruns. Triangulating these methods ensured a holistic analysis of quantitative trends and qualitative contexts.

2.2.1 Survey Instrument

The study's central instrument was a structured questionnaire evaluating the Standard Bidding Document (SBD) efficacy in road and bridge Design-Build projects. Developed through literature synthesis and preliminary expert interviews, the instrument focused on five core contractual dimensions: transparency, cost/time control, qualification criteria, project management frameworks, and dispute resolution. It incorporated a 5-point Likert scale (1=Never, 5=Always) to gauge stakeholders' perceptions of SBD implementation consistency, alongside demographic profiling of respondents' roles, experience, and expertise. Post-validation via expert review, reliability testing using Cronbach's Alpha ($\alpha=0.864$) confirmed good reliability, as suggested by (Tavakol and Dennick, 2011; İnal et al., 2018).

2.2.2 Sample Size and the Profile of Respondents

A purposive sample of 75 Iraqi road and bridge professionals received the structured questionnaire, yielding 65 valid responses (87% response rate) that reflect robust engagement with the research topic. Although the sample size is relatively small, it was limited to the professionals directly involved in project implementation, in order to ensure the relevance and reliability of the collected data. Respondents represented key project stakeholders, categorized into five functional roles: project owners, consultancy firms, supervision engineers, resident engineers, and contractors, as delineated in **Table 3**. This stratification ensures methodological rigor by capturing diverse perspectives across the project governance hierarchy, from strategic decision-makers to on-site implementers.

Table 3. Respondents' distribution according to professional role

Professional role	No. of respondents	Percentage of responses (%)
Owner	20	30.8
Consultant	3	4.6
Supervision and Follow-up Engineers	22	33.8
Resident Engineers	10	15.4
Contractor	10	15.4
Total	65	100.0

Respondents were grouped by years of professional experience to validate data reliability and ensure representation of varied expertise levels. This classification enables detailed analysis of SBD implementation challenges across different career stages, as shown in **Fig. 1**.

The respondents' varied professional expertise and extensive experience in Iraq's road and bridge sector ensure diverse perspectives, reinforcing the methodological credibility of findings. Furthermore, participants were categorized by their highest qualification obtained: Bachelor's (BSc), Master's (MSc), or Doctoral (PhD) degrees, as detailed in **Fig. 2**.

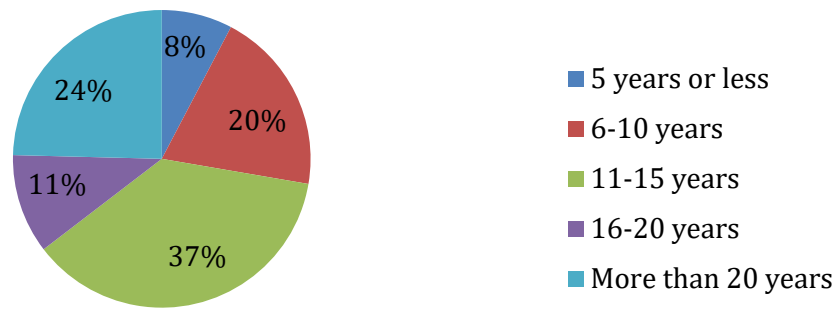


Figure 1. Respondents' distribution according to years of professional experience.

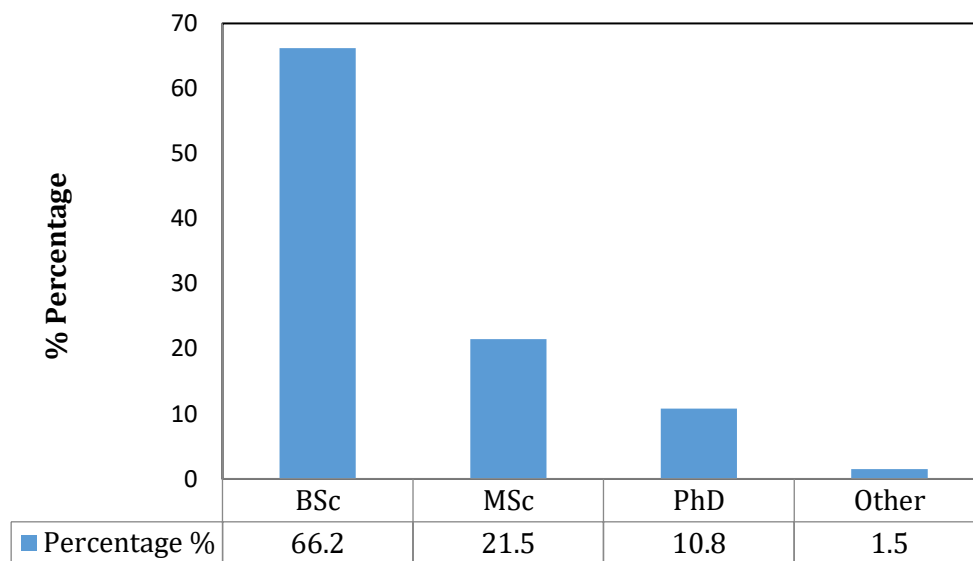


Figure 2. Respondents' educational level.

3. RESULTS AND DISCUSSION

3.1 Survey Data Analysis

The evaluation of Iraq's Standard Bidding Document (SBD) for Design-Build contracts utilized descriptive statistics (mean, standard deviation) via SPSS software to quantify stakeholder perceptions across five performance dimensions: transparency, cost/time control, legal clarity, project management impact, and alignment with international standards. Results, summarized in **Table 4**, highlight critical strengths and limitations:

1. Highest-rated dimension: "Provide the most acceptable international terms and standards and most guarantee the rights of all contractual parties" ($M = 4.09$, $SD = 0.96$), reflecting SBD's robustness in formalizing globally recognized contractual safeguards.
2. Lowest-rated dimension: "Minimizing modifications due to changes in project design" ($M = 3.46$, $SD = 0.87$), indicating systemic gaps in addressing unforeseen design changes, the key driver of delays in road/bridge projects. Tabular and graphical outputs (**Table 4** and **Fig. 3**) prioritize clarity for engineering audiences, directly linking statistical trends to actionable SBD reform priorities, such as revising change management clauses to enhance design flexibility.

**Table 4.** Descriptive statistics of survey responses.

No.	Survey Question	Mean	Standard Deviation (SD)
1	The use of SBD is considered effective in implementing major road and bridge projects.	3.75	0.95
2	The application of SBD is an optimal method for ensuring transparency and reducing administrative corruption in government projects.	4.00	0.77
3	The instructions to bidders in SBD provide all the necessary information to prepare a complete and responsive bid.	3.74	0.82
4	SBD includes clear evaluation and qualification criteria with a clear methodology for their application.	3.82	0.83
5	The general conditions of contract in SBD cover all legal aspects, obligations and rights of both contracting parties.	3.89	0.89
6	The SBD provides detailed financial requirements to ensure the financial capability of bidders.	4.00	0.88
7	SBD offers a clear framework for effective project management.	3.80	0.90
8	The use of SBD contributes in mitigating and addressing project delays.	3.65	0.94
9	SBD ensures cost control and budget adherence in projects.	4.05	0.82
10	The SBD contributes to achieving the required quality standards in project implementation.	3.71	0.90
11	SBD facilitates coordination among project parties.	3.58	0.88
12	The SBD plays a vital role in managing contractual disputes that arise during project execution.	3.55	0.98
13	The SBD help in minimizing modifications due to changes in project design.	3.46	0.87
14	SBD provides the most acceptable international terms and standards and guarantees the rights of all contractual parties.	4.09	0.96
15	The use of SBD is considered an essential tool to attract international companies to develop the expertise of national companies.	4.00	0.95
Overall Mean		3.81	

As shown in **Table 4**, respondents expressed positive perceptions of the SBD, with most statements receiving mean scores above 3.5, indicating a general agreement on its effectiveness in Design-Build projects. Statements related to cost control ($M = 4.05$, $SD = 0.82$) and financial requirements ($M = 4.00$, $SD = 0.88$) were rated highly, implying that respondents acknowledge the document's strength in ensuring financial discipline. However, contractual dispute management ($M = 3.55$, $SD = 0.98$) received lower ratings, indicating areas where the document may require further refinement to enhance its

applicability in Design-Build projects. **Fig. 3** illustrates the mean scores for respondents' evaluations of the Standard Bidding Document (SBD) in Design-Build contracts.

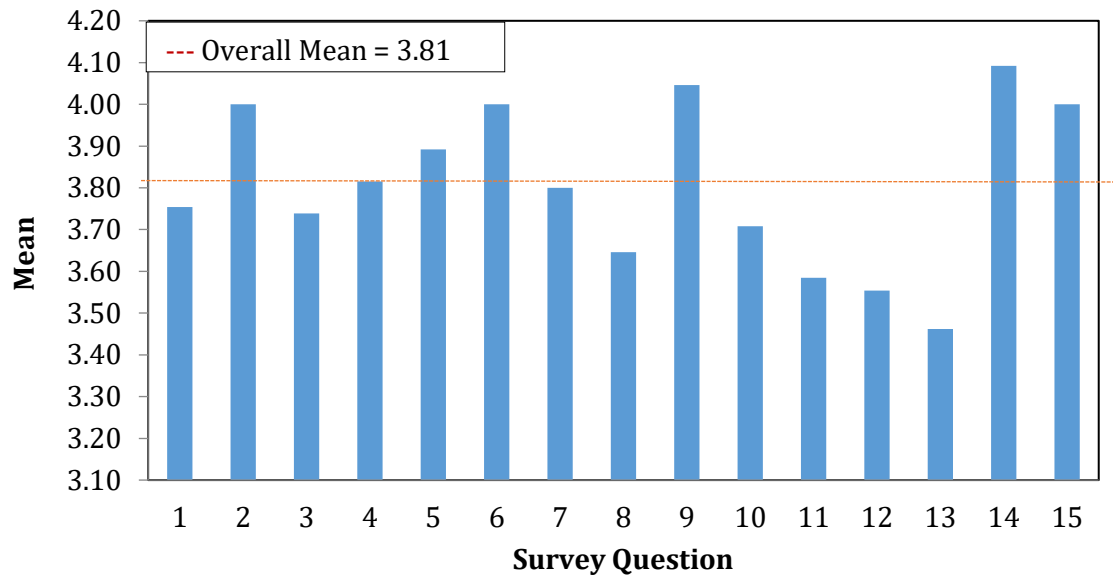


Figure 3. Mean Evaluation of Respondents regarding the (SBD) for Design-Build contracts.

3.2 Case Studies

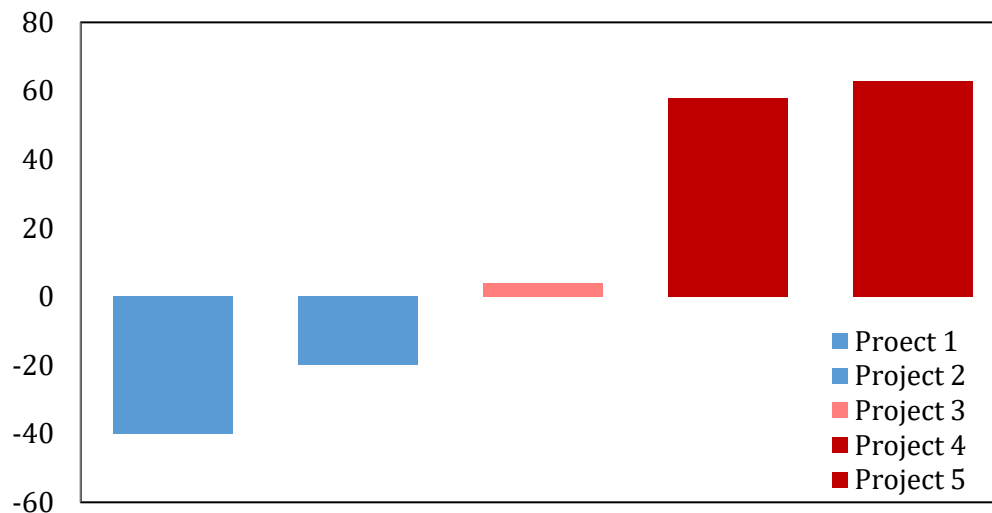
A case study analysis of five major road and bridge projects in Iraq was conducted to validate survey insights and evaluate the SBD's impact on schedule performance in Design-Build contracts. These projects were selected because of their variation in actual completion time and the encountered conditions during execution. While some projects did not undergo any design changes or service conflicts, others faced challenges related to fundamental design changes or conflicts with existing services. These projects were specifically selected because they apply the Design-Build approach using the Iraqi SBDs, and because they represent real examples of projects led by government agencies, with documentation available and direct communication possible with the engineers supervising them. This diversity aims to rigorously evaluate the efficacy of standard bidding documents under both optimal and adverse conditions, and to examine their relationship to project delays—a linkage subsequently investigated through expert interviews. Planned vs. actual durations were analyzed to quantify schedule growth. Results revealed divergent schedule performance outcomes (**Table 5**): three projects exceeded timelines by 4–63%, while two achieved early completion (20–40% acceleration). These findings underscore the need for adaptive scheduling protocols and enhanced risk allocation mechanisms to align the SBD with the dynamic realities of project management. Schedule growth(%) calculated using Eq. (1) (**Al-enezi and Sabah, 2023**).

$$\text{Schedule Growth (\%)} = \frac{\text{Actual duration} - \text{Planned duration}}{\text{Planned duration}} \times 100 \quad (1)$$

Fig. 4 visually represents the schedule growth data presented in **Table 5**, explaining the variations in project durations.

**Table 5.** Schedule growth percentage for projects.

Project	Schedule Growth (%)
Project 1	- 40
Project 2	- 20
Project 3	4
Project 4	58
Project 5	63

**Figure 4.** Schedule Growth Percentage for selected projects.

No cost growth was reported, and all five case study projects adhered to their contractual budgets due to the fixed-price nature of the Design-Build contracts based on Iraqi SBDs, which do not allow for cost escalation after awarding the contract.

3.3 Interviews on Schedule Growth

Interviews were conducted with key stakeholders in order to gain deeper insights into schedule growth's causes, including project managers, site engineers, and government employers. These discussions are intended to identify critical factors causing project delays and assess the contractual provisions that require modifications to enhance project delivery. The interviews highlighted two primary causes of schedule growth in Design-Build projects:

1. The need for frequent design modifications: Several respondents noted that design changes were required during execution due to unforeseen site conditions or incomplete initial studies.
2. Conflicts with existing infrastructure: Many stakeholders emphasized that unforeseen clashes with underground utilities, road networks, and other infrastructure components caused substantial delays.

This finding aligns with survey questionnaire results, indicating that the SBD for Design-Build projects are relatively ineffective in mitigating design changes.

Given the limited number of case study projects and the varying nature of the available data, statistical correlation analysis was replaced by a descriptive comparison, as illustrated in **Table 6**.



Table 6. Descriptive comparison of schedule growth in relation to design changes and infrastructure conflicts.

Project	Schedule Growth (%)	Design changes	Infrastructure conflicts	Notes
Project 1	- 40	No	No	Early completion
Project 2	- 20	No	No	Early completion
Project 3	4	No	No	Minor overrun
Project 4	58	Yes	No	Delay due to major design changes
Project 5	63	No	Yes	Delay due to infrastructure conflicts

As shown in **Table 6**, the two significantly delayed projects (project 4 and project 5) encountered either design changes or infrastructure conflicts, demonstrating how such challenges contribute to schedule growth in Design-Build contracts.

This study reveals critical insights into Iraq's Standard Bidding Document (SBD) for Design-Build road and bridge projects. Although SBD shows strong cost control, with no cost growth across all case projects, and provides the most acceptable international terms and standards and most guarantees the rights of all contractual parties, its effectiveness in alleviating schedule delays remains uncertain. Key findings include :

1. Design Modification Challenges :

- SBD received the lowest survey rating for minimizing design changes, correlating with +4% to +63% schedule growth in projects.
- Case studies confirmed that projects with minimal design changes achieved early completion (-20% to -40% schedule growth).

2. Risks of Infrastructure Conflict: Expert interviews revealed that unexpected subsurface utility conflicts in addition, insufficient geotechnical data, are primary causes of design changes, which the SBD's inflexible clauses do not proactively address .

3. The Balanced Contractual Framework of the SBD and its standardized terms reduced contractual ambiguities and disputes, but its inflexibility in change management caused delays.

These findings reveal a fundamental flaw in the current structure of Iraq's Standard Bidding Document (SBD) for Design-Build contracts. While SBD is strong in financial governance and securing the rights of project parties, it lacks the flexibility and adaptability needed to efficiently execute projects. The inability of the documents to manage design changes and anticipate infrastructure conflicts efficiently points to a procedural rigidity that hinders effective implementation. This highlights the urgent need for institutional enhancements that allow for a more dynamic handling of risks and changing site conditions, especially in infrastructure projects where unforeseen issues are common and negatively impact their success. In this context, when comparing these documents with international models such as FIDIC (Yellow Book), it becomes clear that FIDIC contracts provide clear mechanisms for dealing with change orders and unforeseen circumstances and for approving design revisions through dedicated clauses, along with systematic procedures for risk allocation and dispute resolution. At the procurement policy level, World Bank documents (RFB –



Design & Build, 2017) demonstrate a more mature institutional structure, including mechanisms for filing complaints, organizing bid evaluation, and accurately distributing risks among parties, in addition to disclosure and accountability requirements. In contrast, current Iraqi SBDs lack this flexibility and organization, limiting their effectiveness in dealing with implementation complexities and underscoring the need to develop them in line with global models.

4. STUDY LIMITATIONS

This study has several limitations. First, the sample size of the survey was limited to 65 valid responses, and although the sample was restricted to professionals directly involved in the projects studied, its size may constrain the statistical generalizability of the findings. Additionally, it was limited to analyzing only five case studies, which restricts the possibility of conducting advanced statistical analyses or generalizing the results more broadly outside the specific context of the study. However, these projects were deliberately selected to represent a diversity of implementation conditions and performance outcomes. The study also focused primarily on time performance, as there were no cost overruns—all projects implemented under fixed-price Design-Build contracts. Finally, local context factors in Iraq—such as administrative procedures, institutional practices, and limited data accessibility—may affect the applicability of the results in other countries or environments.

5. CONCLUSIONS

This study assesses the effectiveness of Iraq's Standard Bidding Document (SBD) in controlling cost and schedule outcomes for Design-Build Road and bridge projects. Critical results reveal the following:

1. Cost Control and Procurement Transparency :
 - The SBD shows no cost overruns across all case projects, highlighting its efficacy in maintaining budget control.
 - Survey respondents considered the SBD successfully improved procurement transparency and eliminated contractual ambiguities, confirming expert acceptance of its role in reducing disputes.
2. Schedule Performance Limitations:
 - SBD's inflexibility in addressing design changes is considered as a significant weakness. The lowest survey mean highlighted its inability to reduce design changes, confirmed by case projects with major design changes encountered schedule delays .
 - In contrast, projects with no design change completed ahead of schedule, highlighting the SBD's efficacy when project scopes remain stable .
3. Systemic Inflexibility: Expert interviews revealed that unanticipated infrastructure conflicts and design changes are the primary causes of delays. SBD's static clauses are insufficient in addressing these dynamic challenges, resulting in schedule delays.

Credit Authorship Contribution Statement

Sarah Abdulkhaleq Ali: Writing – original draft, review & editing, research and data collection. Abbas M. Burhan: Supervision, review & editing, validation, project management.



Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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تقييم فاعلية وثيقة العطاءات القياسية لعقود التصميم والتنفيذ في مشاريع الطرق والجسور

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الخلاصة

يعد تنفيذ عقود التصميم والتنفيذ ضمن إطار عمل وثيقة العطاءات القياسية في العراق خطوة أساسية لتعزيز البنية التحتية لمشاريع الطرق والجسور. تهدف هذه الدراسة الى تقييم فعالية هذه الوثيقة في تقليل تجاوز الكلف والتأخيرات الزمنية، وذلك باستخدام منهجية مختلطة شملت استبياناً لعدد من المهندسين (بلغ عددهم 65)، وتحليل دراسات حالة لخمس مشاريع منجزة، بالإضافة الى مقابلات مع خبراء مختصين. اظهرت نتائج الاستبيان وجود توافق عام على كفاءة الوثيقة في تعزيز الشفافية في عمليات الشراء وضبط الكلف، في حين كان مستوى القبول اقل فيما يخص قدرتها على معالجة التعديلات التصميمية. وقد أكدت دراسات الحالة هذه النتائج، اذ تبين ان المشاريع التي واجهت تغييرات تصميمية كبيرة عانت من زيادات واضحة في المدة الزمنية، رغم بقاء الكلف ثابتة في جميع الحالات. كما كشفت المقابلات عن ان التعارضات غير المتوقعة في البنية التحتية والتعديلات المتكررة في التصميم كانت من أبرز اسباب التأخير، مما يشير الى وجود ثغرات في احكام التكيف ضمن الوثيقة الحالية. تخلص الدراسة الى ان وثيقة العطاءات القياسية ورغم ما تقدمه من حوكمة مالية قوية، الا ان هيكلها الصارم يعيق المرونة المطلوبة لادارة التصميم بكفاءة. لذا، فان المراجعات المستقبلية لهذه الوثيقة يجب ان تركز على دمج أطر تكيف ديناميكية، وتحسين آليات توزيع المخاطر، وتضمين اجراءات مراجعة تصميم واضحة، بما يضمن الاستجابة المنهجية للتعقيدات الناشئة وتحقيق نتائج أفضل في تسليم مشاريع البنية التحتية. توفر النتائج رؤى عملية مفيدة لسياسات البنية التحتية في العراق، لاسيما بالنسبة لوزارة التخطيط المسؤولة عن تنظيم وتحديث وثائق العطاءات القياسية، وكذلك للجهات المنفذة مثل وزارة الإعمار والإسكان والبلديات العامة، ومديرية الطرق والجسور، وأمانة بغداد. وتدعم هذه النتائج مراجعة البنود الأساسية في الوثائق لضمان إدارة فعالة للتغييرات التصميمية، وتقليل التأخيرات، وتعزيز كفاءة تنفيذ المشاريع.

الكلمات المفتاحية: وثائق العطاءات القياسية، عقود التصميم والتنفيذ، مشاريع الطرق والجسور، المشتريات العامة.