

Article

Bridging the Literature Gap on eProcurement Systems: Insights from Saudi Arabia's Sustainable Development Transition

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Abstract: This paper highlights the transition from traditional procurement systems to the newly introduced eProcurement system in Saudi Arabia, emphasizing the differences and improvements and their implications for sustainable development. The new system aims to enhance transparency, clarify purchasing methodologies, and build trust with the government through effective governance of government purchases and tender management. Guided by Royal Decree, this system aligns with the eProcurement Program to transition into digital processes for proficient bids and government purchases, contributing to more efficient and sustainable procurement practices. While some public agencies have attempted to adopt the new model contract for executing construction projects, it has faced challenges due to its lack of alignment with the best practices and sustainability considerations. The authors argue that many large projects remain exempt from this system, which poses obstacles to achieving the goals of sustainable economic development. The objective of this paper is to explore the newly revised Saudi procurement contracts in comparison with traditional public works contracts, with a focus on how they address socio-economic and environmental sustainability. The research provides an overview of various aspects related to public works contracts (PWCs) in Saudi Arabia, including framework agreements, online reverse auctions, industry localization, knowledge transfer, traditional lump sum contracts, two-phase tenders, and construction project competitions, analyzing their alignment with sustainable development goals. There is limited literature on recent models introduced by the Saudi government, but there are extensive resources on general contract law principles and international public policy. This foundation helps with understanding the legal aspects of public works contracts in Saudi Arabia, their alignment with international standards, and their implications for fostering sustainable development. By examining the literature, researchers can gain insights into the legal and policy framework governing public works contracts in Saudi Arabia and their role in promoting sustainability. The importance of this research lies in its comparative analysis, offering valuable insights into the evolution of procurement practices in Saudi Arabia and their contribution to sustainable socio-economic growth.

Keywords: eProcurement; public works contracts; Saudi; public-private; Saudi Vision 2030



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1. Introduction

In the competitive private sector, public contracting has often been referred to as traditional public procurement, where general contractors' duties are procured on a "lump sum" basis rather than in the more traditional input-oriented, cost reimbursement manner. Nonetheless, the work that public sector developers must perform is influenced by the same

mechanisms that occur on both sides of the public–private sector divide [1,2]. Therefore, one may expect very different ways to coordinate efforts when government work is not as straightforward as it can be. It is the opinion of Alanzi and Hasan [1,2] that the public funds’ constraint can be best thought of as just another of the many constraints faced by managers (both public and private) as they allocate resources to establish a coalition behind a particular task (in this case, the awarding of the obligations for completing government work to private enterprise). Thus, while there are certainly distinguishing characteristics of public contracting, especially from the public’s perspective, the areas of the main focus of public works contracts (PWCs) can ultimately turn out to be the same principle agent-related issues that were of interest to researchers in the aforementioned papers [3]. This paper focuses on some of the most recent developments in the laws and the procurement literature in the study of PWCs and briefly reviews recent models in public contracts from the literature and experts’ discussions. In the current literature, we will focus on PWCs as distinct from other forms of contracting typically found in the public sector, such as supply contracts and leases to third parties. Moreover, the paper highlights the recent trends in construction and outlines how they are being addressed in the case of the KSA public works contract (PWC), ultimately paving the way for a comprehensive review of constructive law.

The importance of this research paper lies in several key areas as follows:

- **Comparative Analysis.** By comparing the old and new eProcurement systems in Saudi Arabia, the paper provides valuable insights into the evolution of procurement practices and the benefits and challenges associated with the transition.
- **Transparency and Governance.** The paper highlights how the new eProcurement system aims to enhance transparency and governance in government purchases and tender management. This can build trust between the government and stakeholders.
- **Alignment with International Standards.** Exploring the alignment (or lack thereof) of Saudi procurement contracts with international best practices can provide a roadmap for further improvements and modernization.
- **Legal Framework.** The paper delves into the legal aspects of public works contracts in Saudi Arabia, which is crucial for understanding the implications for both domestic and foreign contractors.
- **Challenges and Solutions.** By identifying the challenges contractors face in implementing recent public works contracts and suggesting mitigation strategies, the research offers practical guidance for enhancing project outcomes.
- **Literature Gap.** By addressing the limited literature on recent models in Saudi public works contracts, the paper contributes to the academic and professional discourse on procurement and contract management in the region.
- **Strategic Insights.** The paper provides strategic insights into various contract types and methodologies, including framework agreements, online reverse auctions, and industry localization, which can inform policy making and project planning.

1.1. Definition of Public Works Contracts

Public works contracts cover the whole process, from the need assessment to the project planning, through the provision of equipment, materials, and manpower, to the maintenance and the final delivery of the completed structure. In this context, they also involve studies of the costs and risks associated with the realization of a project or the construction and then the maintenance of the work life cycle cost analysis and target costing [4,5]. Because they involve long-term manufacturing operations with the complex organization of labor, geographically dispersed and involving large material goods, the acquisition, use, or development of organizational software (management, control, mon-

itoring, data consolidation, project coordination, planning, resource pooling, schedule synchronization) is a strategic option for the companies subject to ISO 9001-imposed requirements, Health & Safety at Work, etc., which face the many specific technical constraints of this type of project [1,2].

Public works contracts encompass the construction, maintenance, repair, and related services of buildings, infrastructure (civil engineering), and building facilities of any nature. They may involve roads and footpaths, bridges, tunnels, and channeling, and they can also cover utilities, waste management, garbage transportation, water supply systems, energy supply, hospitals, schools, armed forces facilities, airports, railway stations, shunting lines (for carriage of railway equipment), track renewal and maintenance, power plants, wind farms, flood control and protection, river or coastal defense, or risky buildings (industrial plants) [1]. The engineering, design, or architectural services are not included in this category unless they are directly related to the building or structure (for example, engineering of the track infrastructure for a railway line). Similarly, installations such as network, data, IT equipment deployment or maintenance, plumbing, or heating systems are not covered either by these definitions [1,2]. The definition of public works contracts can vary, depending on the specific jurisdiction or country in which they are being discussed.

1.2. Importance of Recent Models

The current procurement contract structure in Saudi Arabia is of great importance due to its implementation and subsequent advantages in public projects. These models have led to notable improvements in efficiency and accountability, while also encouraging a more transparent and competitive bidding process [3,6,7]. The recent models from 2018 and 2019 are significant in their simplicity and universal applicability, especially in the context of civic public works. These models embody the philosophy of prioritizing protection and accountability. They are the result of proactive leadership thinking, with the aim of promoting good governance and combating corruption. The 2018 model is specifically designed for regular public works projects, such as the construction of a new covered playground, involving portable schools and the construction of concrete and steel structures. On the other hand, the 2019 model is tailored for smaller construction contracts that can be quickly executed by local skilled individuals [6,8–11]. Recent models in Saudi public works contracts have gained significant attention due to their potential to improve efficiency and transparency in the procurement process. Hence, this research aims to provide an outline of the public works contracts in Saudi Arabia and discuss the recent models that have been implemented. These recent models aim to enhance project efficiency, promote transparency, and ensure fair competition among contractors, by introducing new procurement procedures and contract arrangements, addressing the design of a contract based on a new model, and, in some cases, like the FIDIC, the agreement between contracting entities and other international organizations about the use of certain conditions for contracts. This is followed by the results, conclusions, and recommendations of this study. Therefore, this study will investigate the practical implications of these changes and provide recommendations for all parties involved in public works contracts.

The importance of this research is its valuable insights into procurement practices in Saudi Arabia.

2. eProcurement System

The eProcurement system has revolutionized the way public works contracts are conducted in Saudi Arabia. This digital platform allows for transparency, efficiency, and accountability in the procurement process. It enables government entities and contractors to interact and transact electronically, eliminating the need for traditional paper-based meth-

ods. The eProcurement system streamlines the entire procurement cycle, from tendering to contract award and management. It provides a centralized database for all contract-related information, ensuring easy access and retrieval of data. Additionally, the system incorporates advanced features such as electronic bidding, online document submission, and real-time notifications. With the eProcurement system in place, Saudi Arabia has witnessed significant improvements in the public works contracting process, resulting in enhanced project delivery and reduced costs [1,12–15].

A major initiative was the establishment of the eProcurement system, which is the mortgage market designed for the governance of government purchases and tender management. It will help to achieve transparency, clarify the methodology of purchasing, and strengthen trust with the government. It can be honorable in the management of the tenders and purchases and can implement discipline and adherence to the Royal Decrees & Ministry's regulations and decisions [8–10,16]. The activities of the recent tenders include many of the required practices that help strengthen digital transactions to manage the process of government purchases and the operation of tenders. Subsequently, the pursuant of the application of the e-government lead considered carries Royal Decree No. 8/B/28712, dated 15/08/1428 AH, and clarifies the terms and conditions of the application of the e-government in Saudi Arabia, which formed the road map that rests on the eProcurement Program and processes the transformations into the digital directions to that are proficient in the field of offers and government purchases [17,18].

2.1. E-Government “Etimad” Portal

In 2015, the first private infrastructure project began working. However, private infrastructure is dependent on the completion of common infrastructure. As Etimad e-services develop, the separation of businesses among the agencies has been a challenge [19]. MOF Etimad sent several questionnaires to these agencies to find out their aspirations and the difficulties they faced. According to these agencies, even with the upcoming Etimad common infrastructure, the projects did not have the potential for failure within nine months. Since the three departments had their own distinct private infrastructure, redefining e-services only for the department led to a high cost. Etimad could not move forward because of concerns that users would not take advantage of the portal [1,20–23]. Starting in 2013, the initiative went through the creation of private infrastructure for each government agency and the creation of common infrastructure among the agencies. In 2014, the initiative moved forward to the creation of private infrastructure and the completion of the implementation of infrastructure as priorities [9,24,25].

Planning for the Etimad e-services in 2013 went through the following steps: start initiating, investigations during which the business case was prepared, collection and investigation of the business requirements, initiation of service development, application of service, launch, business plan, operation of the service, and finally, review and update of the service. KSA MOF maintains an e-portal called “Etimad” and has developed guidelines to ensure organizational and technological infrastructure for e-government in Saudi Arabia. Most of the government departments, such as the Ministry of Housing, Ministry of Communication & Information Technology, Ministry of Labour, and Ministry of Health, have their own e-portals that link with the parent MOF e-portal “Etimad” [26]. The “Etimad” portal is a key component of the Saudi government's efforts to modernize and streamline public works contracts. It provides a user-friendly interface for contractors to submit bids and collaborate with government agencies. The portal also offers a secure and efficient platform for government agencies to evaluate bids and streamline the contract award process. Contractors can easily access information on upcoming projects and submit their proposals online. The portal's comprehensive database ensures that contractors have access to all

necessary project details and documentation, eliminating the need for manual paperwork and reducing administrative burdens. Contractors can also track the progress of their submitted bids and receive real-time updates on the status of their proposals through the portal. This feature enhances transparency and provides contractors with greater visibility and control over their bidding process [26].

2.2. Public Agencies

The Ministry of Public Works in Saudi Arabia has developed specific regulations for government agencies. The Ministry of Municipal and Rural Affairs oversees the maintenance, warranties, and protection of all public infrastructure. Monitoring these activities is conducted by assigning a designated director to oversee each project, with larger-scale projects having a dedicated project director. Other key organizations, such as Engineering Agencies, operate under the authority of the Ministry of Municipal and Rural Affairs. The planning, construction, and maintenance of infrastructure in Saudi Arabia are carried out through government agencies. The entire process of public works projects is devised and implemented by the government. It is the responsibility of the Saudi government to regulate and coordinate the various departments involved in these projects. The Ministry of Public Works is a significant local authority responsible for managing and approving public works projects, as well as overseeing the administration and supervision of these projects. Furthermore, the Ministry plays a crucial role in ensuring compliance with quality standards and specifications in public works projects [27–30].

3. Goals of the Government Tenders and Procurement Law

Saudi Arabia's Council of Ministers (CoM) gave their approval to the new Government Tenders and Procurement Law [31]. The new GTPL replaces the last version of the GTPL issued in 2006. The new GTPL is intended to guide governmental entities in procuring projects in an open, transparent, and fair manner, giving equal opportunities to all bidders. The GTPL has been fully implemented for all Saudi government projects since 2019. Bringing the Saudi government's procurement system into line with its Vision 2030 ambition is the main goal of the GTPL [1,15,32]. Vision 2030, announced in April 2016, aims to diversify and strengthen the Saudi economy and contains 96 specific and strategic objectives to achieve this goal. These include the reduction in Saudi's dependence on oil; the promotion of investment activities; the expansion of its infrastructure network; and the development of public service sectors [7]. In order to help government agencies make unbiased, open, and conflict-free procurement decisions, the GTPL is designed to streamline the procedure. In August 2019, a new Government Tenders & Procurement Law, "New GTPL", was published in the Official Gazette of Saudi Arabia, which will apply to all Saudi government projects beginning in November 2019 [1]. After studying the GTPL, one can develop a better understanding of the public procuring practices being utilized at the moment. The new GTP specified essential types of procurement contracts. They afford all the other contracts, are commonly engaged by the public suppliers, contractors, and service providers, and are particularly high-value, high-risk contracts, including itemized supply contracts, financial leasing contracts, build-and-lease-to-own contracts, operating contracts in state-owned facilities and state-operated capital projects, and the major public works contract. While the major public works contract is in line with all the international infrastructure procurement contracts, the four other types of contracts seem to be quite new public sector procurement asset regearing or capital relief exchanges [1,3,33].

Legislation has tried to keep pace with these rapid developments by enacting the Government Tenders and Procurement Law (GTPL) in 2006 to regulate the interests of the parties in such contracts, and another law was added in 2007, the implementation regula-

tions of the Government Tenders and Procurement Law (GTPL), which took engineering, procurement, and construction contracts (EPCs) out completely [1,15]. EPC contracts came back again to the mind of the “unexpected” in the GCC Contract Law No. (12) in 2015 [1,34]. The Government Tenders and Procurement Law is crafted with the principles of transparency and openness of procurement activity to public access. Second, it is crafted with the principle of equal treatment of all suppliers and contractors, as well as the principle of recognition of the needs and importance of small- to medium-value or low-risk procurement activities [1,33]. The Kingdom of Saudi Arabia is spending billions of US dollars on implementing and constructing capital projects. The Kingdom entered into many international public works contracts on an engineering, procurement, and construction basis (EPC contracts) with international construction companies [35,36] to improve and expand water desalination plants, electricity generating plants, roads, telecommunication networks, and wastewater treatment plants, which, during the coming few years, will be joined with contracts for ambitious mega-projects [33]. The recent models in Saudi public works contracts have brought about significant changes in the implementation and regulation of government tenders and procurement. The state is the largest consumer in the Kingdom. Spending on building maintenance and minor construction works in addition to public works is administered through the financial system of the state’s 2016 procedures [3,6,7,37,38].

3.1. Overview of Public Works Contract Models

Current public works contracts generate complicated interactions among various parties involved in a building project. To address a broad range of project characteristics, several contract types have been developed to allocate responsibilities fairly, not only within the contracting construction unit but also among the owners, implementers, and other external agents. The general categories of contracts include design–build, finance-and-design contracts, simple public works contracts, which cover the fundamentals of civil and building construction, and special purpose corporations, which are usually involved in major infrastructure projects [1,34].

3.1.1. Traditional Lump Sum Contracts

In most private sector projects, an initial lump sum contract is the most common form of payment in public works contracts. This lump sum is meant to cover the builder’s sunk costs and create incentives for both the principal and the builder to invest in the required relationship-specific asset, such as a bridge or a dam. Based on various static and dynamic models of the construction process proposed in the literature, it has been shown that without a lump sum payment at the beginning of the project, both public and private projects would not be implemented [34,39]. Over the past two decades, a number of authors have proposed a variety of contractual arrangements to be used in public works contracts. A construction project can be completed for a set cost under a lump sum contract. This kind of construction agreement, also known as a fixed-price contract, is commonly used for projects with a defined scope of work because it offers simplicity to both owners and contractors. The cost associated with the asset being built is paid throughout the contracting process that extends over several stages and periods. After a gradual starting period, the developer and the builder excitingly increase the resourcing rates until the end of the project [1,34].

3.1.2. Design–Bid–Build Contracts

In the design–bid–build DBB (traditional) delivery method, the owner hires a designer who completes the design and the construction documents; the project then goes out to bid; a contractor is hired; and, finally, the facility is built. The most common method of

carrying out projects, design–bid–build, is favorable to bidders seeking low costs. Using this approach, the owner contracts contractors and designers independently. The design company provides design documents that are entirely complete. Once the project has been approved, the owner proceeds to engage a contractor through a competitive process involving consulting firms, with the ultimate goal of selecting the most favorable bid from a construction company. To avoid showing any bias towards newly established building companies, preference is given to those that already possess some form of organizational structure, thereby making the competition a subcontractor selection event [40]. Due to their limited capacity to offer additional services and their consequent lack of competition, these established companies develop a close dependency relationship with the owner, resulting in a new cycle of partnership dynamics centered around the construction site, all while being closely supervised by the owner. However, any deviation from the original project necessitates changes to this contractor–owner relationship, regardless of the significance of said modifications [1,10].

The design–bid–build system is widely used in international construction. In this approach, the owner enters into a contract with a designer, outlining the project requirements and specifications, particularly in terms of environmental and safety standards, benchmarks, timelines, resources, and other important considerations related to local laws. The owner is also responsible for funding the technical project, which should be inspected by a technical supervisor and approved by the licensing authority. If these standards are not sufficiently strict, it could potentially lead to fraudulent activities in both the design and implementation phases of the project. The number and size of the contract's clauses vary, depending on the project requirements, but a specific time frame is always established for the approval and payment of technical tasks [5]. In addition, Build, Own, Operate, and Transfer (BOOT) is a type of public–private partnership [PPP] model generally used to facilitate infrastructure projects. In a BOOT arrangement, a private entity takes on the responsibility of designing, financing, constructing, and operating the infrastructure for a specified period.

3.1.3. Construction Management Contracts

In contrast to a guaranteed maximum price, American models pose an ongoing risk of increased costs due to the legal connection between the client's employer and the owner. Furthermore, changing contractors does not release the project manager from their primary responsibility of ensuring efficient project delivery. It was specified that it would be utilized for certain public sector projects valued under GBP 90,000. The appeal of this model lies in its ability to integrate both design and construction management during a crucial stage of the construction industry's recovery [16,41]. This approach allows for better coordination and collaboration between the design team, construction team, and the client, leading to improved project outcomes and reduced risks. These contracts include the organization and implementation of the planning, coordination, supervision, management, control, and completion of public projects or the supervision and financial management of a general contractor undertaking such construction. The main attraction of the construction management contract for insurance experts is that insurability is ensured by the client's employer, as contracts are only between it and individual contractors. The model is ideal for large projects subject to substantial delay and commercial risks, with the client's employer retaining control to protect its own interests. It is popular in the USA and has been used in the UK since 1997 [42–44].

3.1.4. Design–Build Contracts

In contrast to public works contracts, a project relies heavily on the effective performance of all parties involved. This is performed to minimize the excessive costs that arise every year, amounting to approximately 5% of the total project cost. These costs exceed the initially estimated expenses, which primarily consist of conforming to design standards and gradually escalate over a period of 10 years [45]. Design–build (DB) is a system of contracting widely popular in the private construction industry, which has, in the last decades, seen its applications also increase in “company-unfavorable” contexts, like the public works one. In a DB contract, a single entity—the design builder—is obliged to realize a work (or a complex of works) named in the contract, starting from a schematic design provided by him/herself. This innovative approach to construction management has revolutionized the industry, offering numerous advantages and streamlining the entire project delivery process. With its ability to combine the design and construction phases, design–build has proven to be a cost-effective, efficient, and time-saving method that promotes collaboration and fosters synergy between all stakeholders involved [4,46]. By eliminating the traditional design–bid–build approach’s fragmentation and bringing all parties together under one roof, the design builder has greater control, accountability, and responsibility throughout the entire project life cycle, from conception to completion. By embracing the design–build approach, clients can enjoy a seamless, integrated process that ensures a higher level of quality, increased value, and enhanced overall project outcomes. With the provision of this significant approach, design–build organizations can become more innovative, flexible, and adaptable, which helps them overcome challenges and deliver outstanding outcomes that go above and beyond expectations. Furthermore, the collaborative nature of design–build promotes open communication, effective problem solving, and efficient decision making, fostering a sense of unity and shared goals among all project stakeholders. As the design–build method continues to gain traction across various industries, its proven track record of success and proven benefits make it an attractive option for both private and public sectors [8,36,47–49].

3.1.5. Build–Operate–Transfer Contracts

This is a project delivery mechanism in which a government entity grants a private sector party the right to construct a project according to agreed design specifications and to operate the project for a specified time. The private sector party does not own the project.

4. Tender Types

Various kinds of tender types are employed in Saudi public works contracts. These tender types play a significant role in the procurement process and ensure transparency and fairness in the selection of contractors. Different tender types are used in Saudi public works contracts to attract a wide range of contractors with diverse capabilities and expertise. Each tender type has its own set of criteria and requirements that must be met by the contractors in order to be considered for the project. By thoroughly understanding and comprehending these tender types, contractors and stakeholders can effectively navigate the complexities associated with Saudi public works contracts, thereby fostering transparency, accountability, and fairness within the construction industry. The revised version of the Saudi procurement utilized the e-government “Etimad” portal to ease a good portion of public procurement. See the list below of procurement methods that did not exist before and others that are not yet automated by the online reverse auction.

- General tender;
- Selective tender;
- Two-phase tender;

- Direct procurement;
- Framework agreement;
- Online reverse auction;
- Industry localization and knowledge transfer;
- Contest (competition).

Some public agencies have attempted to adapt the new model contract after awarding contracts to execute construction projects under different contract methods, as it is not updated with international best practices. The authors argue that there are many projects, especially, the mega ones, that do not use such a system, as they have special exemptions.

4.1. General Tender

This type is a contract that deals directly with a local or international contractor, and it is performed through a competitive bidding process [50]. The accomplishments of the GT's run have resulted in the distribution of contracts achieved via global tenders, benefiting both local contractors within Saudi Arabia and those from abroad. According to data gathered by the BGT, local contractors have accounted for an average of 80–84% of the total contracts awarded, encompassing various contract types, during the previous twenty years. The majority of these contracts pertain to relatively smaller- to medium-sized undertakings related to urban infrastructure. Only a minority, around 20–32%, constitute the scope of megaprojects within the public sector. These megaprojects are often related to large-scale transportation systems and major developments in the energy sector. Most of these contracts are small- and medium-scale projects involving city infrastructure. Only 20–32% of public works are megaprojects [34,39,40].

Previously, the General Tender (GT) exclusively applied the FIDIC Conditions of Contract for Construction as its General Conditions. However, the Arab Contractors Club from the KSA requested the GT to issue contract forms that are applicable to the Saudi Arabian construction market. There were significant differences between the FIDIC's 1987 version and Saudi Arabian construction practices, as well as the local legal system. As a result, the "NEW GT Contract" was issued in 1999, specifically developed for the Kingdom of Saudi Arabia. The GT asks contracting parties to amend the prescribed contract forms, considering the parties' agreement as Special Conditions [51–54]. The Saudi Council of Ministers has established a body to regulate the performance, auditing, and decreeing of tendering procedures for the allocation of Saudi public works contracts. This body is known as the Board of the General Tender (GT), and all public works contracts are tendered by the GT, an independent regulatory body. The BGT has published contract forms for this purpose. Although many clients want to use their own standard contract forms due to special contract conditions or penalties, the BGT usually rejects these requests. Difficulties with this type include the standardization of contract forms and ensuring fairness in the tendering process. The GT has implemented strict guidelines and evaluation criteria to address these challenges and promote transparency and equal opportunities for all bidders [5,51].

4.2. Limited Tender/Selective Tender

This is a procurement method whereby the procuring entity contacts one or a number of suppliers of its choice. It is a non-competitive procurement process, where only one vendor exists or is engaged by the procuring entity (e.g., single sourcing, one sourcing). There is a need to restrict the tender to a limited number of contractors who possess the necessary qualifications. However, the current FIDIC public works contracts used in Saudi Arabia do not address such requirements. Additionally, none of the existing models used in Saudi Arabia cater to the specific needs of public authority clients in the contracting market.

When selective tender procurement is deemed appropriate for a construction project, a relevant model and procedure must be established in the FIDIC model or another model that is suitable for local use. This is because public tender projects must adhere to certain guidelines set by the university or impose a few client-specific requirements as conditions of the construction contract between the public client and the contractor [38,39,55–58]. The contract for the execution of the construction work included in the tender documentation must incorporate various client-specific requirements. Unfortunately, there is no mechanism to ensure the implementation of these requirements by the public authority when tendering for the construction of any structure in Saudi Arabia. Only a select few of the client's specific requirements, which are mandatory for public clients, should be included in the tender terms of reference. Some of these requirements, related to health and safety during the pre-contract and construction phases, are already outlined in the tender documents. Furthermore, no current model used in Saudi Arabia can address such a requirement for use with public authority clients in the Saudi Arabian contracting market. The selective tender procurement route requires a relevant model and a relevant procedure in the FIDIC model or in another model to be of local use when selective tender procurement is the most appropriate route in the circumstances of any particular construction project. This is because clients of public tender projects must follow some general university regulatory guidelines or only a few client-specific requirements must be imposed as a condition of the construction contract between that public client and the contractor [38,56–60].

The challenges included the need to identify pre-qualified contractors and establish evaluation criteria based on their qualifications and experience. The evaluation criteria should be designed in a way that ensures fair and transparent selection of the most qualified contractors for the project. The selective tender process plays a crucial role in achieving this goal by allowing only pre-qualified contractors to participate in the bidding process, thereby minimizing the risk of awarding contracts to unqualified or inexperienced firms [6,9,38,49,61].

4.3. Two-Phase Tender

A method of acquiring products or services that requires two phases of appointment is called two-stage tendering, which allows a project to progress before the design is complete. Traditionally, there is just one stage to the tendering process: choosing and appointing a tenderer to complete all necessary tasks. When a two-stage tender is used, the tenderer is initially only assigned to perform a portion of the necessary work. In the second stage, they are typically assigned to finish the remaining tasks. The most recent form of procurement in the Saudi construction industry is the more detailed and structured “2-phase tender”. This aims to place primary importance on consultancy services, with the design of a tender document method of procurement to be selected for smaller projects and e-permits for extremely small projects. This method of award is administered through open competitive bidding. Previous research has shown that an understanding of the bids themselves was crucial to the success of a public works construction project, with time estimation by contractors and architects serving as a key performance indicator [62–64]. Additionally, a significant correlation was found between the application of award criteria and bid functions, which were negatively correlated with the bid spread factor and positively correlated with other project performance metrics. This study included an awarding procedure for quantity-based scope project finance, a maintenance period guarantee without contractor assurance, and the assignment of sustainability and social element assessments balanced with an owner who is hard to please [65–68].

4.4. Direct Procurement

This is a procurement method in which the supplier is directly contacted and requested to the tender for the project or contract. Direct procurement involves two parties communicating directly with one another and bypassing any middleman or agent. This high level of non-compliance is possible because the Royal exemptions from the Order have become part of the understandings that exist for public procurement. The government actually has a substantial degree of flexibility in Saudi public procurement, which is very different from the perception provided for, and assumed in, the current legal requirements. These limitations generally involve flexibility around the idea of what the thresholds for procurement financial limitations could have been. The fact that they could have been different, and in many cases set higher than they were, has become interpreted as meaning that they are wrong. It seems that the reasons for the thresholds being set are understood in a very different light. This is supported by the insertion of a possible provision within the introduction of the Royal Order that the financial limits could not be increased only 6 years after the Royal Court had granted substantial increases as part of the formal consultation for the Order [69].

4.5. Framework Agreement

This is an agreement between one or more contracting authorities and one or more economic operators that “aims to establish the terms governing contracts to be awarded during a given period, in particular with regard to price and, where appropriate, the quantity envisaged”. It is referred to as a framework agreement in the context of procurement. By concluding a framework arrangement, an entity employer may procure zero of the works it needs or may only need to request or publicize the Public Works Administration Warranting and selection method for one specific work. The objective is to give an introduction to the concept of a framework agreement as concluded between the employer and one or more contractors under the Saudi Public Works Contract Determination Warranties (PWC-DWs). The approved conceptual model of the services contract is primarily utilized for the site of work in the official document; however, other civil engineers may find this a useful starting point for other new agency services.

4.6. Online Reverse Auction

In the online reverse auction method, suppliers submit online bids to compete against each other. This is unlike forward auctions, where bids increase as the auction progresses; in reverse auctions, bidding starts with the highest possible price and decreases gradually, and the lowest bid wins. On the other hand, a quite different meaning is given to the phrase “online reverse auction” when it is used in public procurement parlance as an external regulatory framework to give full attention to the influences of private interest at the expense of the provider’s interest. In Saudi tendering systems, the auction is usually applied at the detailed design or construction stage for the purpose of obtaining equitable competition. These are acts of “bid rigging” when both the officials (agents) and the contractors (principals) collude in a tender. More recently, however, this case situation has been judicially interpreted in the Kingdom of Saudi Arabia on a public works contract involving the construction of a major public works project in days when electronic systems were not at the heart of public works procurement [5]. The former occurs when the auction is used as a mechanism to obtain equitable competition, but the principal seeks to evade the principle of anti-collusion in bids. The latter is a situation in which two or more bidders, such as electrical subcontractors and general contractor companies, mutually agree not to tender or alter their prices in a manner that deliberately favors one or all of them at the expense of the lack of proficiency of the public participant. Although the main

concern of the tendering system is to obtain the best value through competition, in some instances, public procurement can lead both the public and private sector participants to make questionable transactions. Not least of these are situations where the private sector participant engages in tender malpractices for the purpose of defrauding the public sector participant and engaging in collusion. It is this peril that an online reverse auction, following a request for tender method, is designed to mitigate this problem.

4.7. Industry Localization and Knowledge Transfer

The Kingdom of Saudi Arabia has emerged as a significant player on the global stage in the construction industry. Due to increased investments and growing demand, the Saudi authorities are actively promoting the transfer of knowledge and supporting the industry through localization practices. To further promote the economic growth of the Kingdom, the Economic and Vision 2030 plans need to ensure that additional efforts are made. This includes incorporating the best professional practices in the planning, procurement, and management of large-scale public projects in order to contribute to the technological and knowledge transfer advancements in the construction megaprojects they manage.

The construction industry in the Kingdom of Saudi Arabia has experienced significant growth and has become a major player on the macrostage. With increased investments and a growing demand for construction projects, the Saudi authorities are taking proactive measures to facilitate knowledge transfer and support the industry through localization practices. To ensure the continued economic development of the Kingdom, the Economic and Vision 2030 plans require additional efforts. This includes the adoption of best professional practices in the planning, procurement, and management of large-scale public projects. By doing so, Saudi Arabia can contribute to the technological advancements and knowledge transfer in the construction megaprojects it oversees [5].

4.8. Contest (Competition)

There is a newly introduced government contracting method in the new Government Tenders and Procurement Law. Contracts are aimed at investors and worldwide technology owners to encourage technology and knowledge transfer to the Kingdom in return for a government purchase guarantee. Additionally, this shows that FIDIC experts are coming to the conclusion that the only concessions they would accept are those related to product uniformity mandated by standardized organizations. As well as raising the enthusiasm of designers and technical engineers to improve the overall level of technical competence in this ambitious program to improve productivity, the fees payable should be aligned with the improvement. Whether a contest clause is included in a specific contract depends on policy issues and the existence of a certain level of technical competence to guarantee an improvement in the technical or production organization management of the companies. A recent addition to the Royal Decree and its implementing regulations, namely, the Public Works Environment Protection Bylaw, includes provisions of the Organic Law of Rules of Procedure in public permanent work contracts [39]. Public works contracts may include provisions that motivate the contractor. The technical aspects of project implementation, such as detecting the need for changes during the contest and the effect on cost, do not relate to the contractor, although the prices (fees) are determined. For example, pre-cast concrete will improve the degree of completion of decisions made by the project engineer to implement an important project improvement [39].

5. Comparative Analysis of the Saudi Public Works Contracts, New and Old

5.1. General Observations

This section outlines a comparison between the new Saudi public works contract as displayed on the Etimad website and the Saudi public works contract form pursuant to Council of Ministers Decision No. 136, dated 13/06/1408H. The new Saudi public works contract represents a significant improvement over the old contract in several aspects. Firstly, the new contract is much more detailed, with a substantial increase in the number of pages, expanding the coverage of contractual provisions and requirements. Furthermore, the new contract aligns with the recently published Government Procurement and Tendering System, ensuring adherence to the latest laws and regulations governing public procurement in Saudi Arabia. In terms of layout, the new contract adopts a better and well-thought-out structure. It includes a cover page, an index, and the signatures of both parties after the main contract document, deviating from the previous practice of signing at the very end. This revised layout enhances clarity and streamlines the contracting process. Moreover, the new contract provides more precise durations for approval and payment processes, introducing greater predictability and transparency into project timelines and financial obligations. Additionally, the engineer's role is more explicitly defined in the old contract, ensuring a clear delineation of responsibilities and expectations. Lastly, the new contract offers improved clarity regarding handover procedures, particularly emphasizing the initial handover process. This clarity facilitates a smoother transition between project phases and enhances overall project management. These enhancements in the new contract demonstrate a commitment to refining the contractual framework, addressing previous shortcomings, and promoting efficiency and clarity in public works projects in Saudi Arabia.

5.1.1. The Main Contract Document

The new contract differs significantly from the old contract in several aspects. The introduction of the old contract is brief, while the new contract expands on various points, including the examination of documents and site, and adherence to the Government Procurement and Tendering System. The list of required contract documents also varies between the two contracts. The old contract specifies a fixed list, prioritizing specifications over plans and drawings, whereas the new contract suggests adding documents based on project needs, with financial terms given prominence. Additionally, the new contract includes clauses on dispute resolution and the number of original contract copies, whereas the old contract lacks these provisions. These differences in the documents shown in Table 1 demonstrate the improvements and adaptations made in the new contract to enhance clarity, flexibility, and effective governance in public works projects.

Table 1. Comparison of the new and old contract's main document.

Criteria	Old Contract	New Contract	Reference
Difference in the introduction	The introduction is brief and does not have a section for it.	The introduction has a whole section and mentions new points regarding the examination of the provided documents and site, the contract, and the works that follow the Government Procurement and Tendering System, etc.	Royal Decree No. M/14, dated 4/7/1397 AH
Difference in the list of required documents	- Has a list of required documents that have to be followed without leaving choices to the gov. entity to decide. - It gives importance to specs over plans and drawings.	Suggests some documents and their order to be added to the gov. Gives importance to the financial terms, as it is the third in the order.	Article No. 2: contract documents

Table 1. *Cont.*

Criteria	Old Contract	New Contract	Reference
Guarantee terms of work duration	Has a whole section for the Guarantee Terms of Work Duration [Article 4].	Does not clearly mention the Guarantee Terms of Work Duration in a separate clause.	Article No. 4
Dispute resolution	Does not mention dispute resolution in the main contract document.	Has a whole clause about dispute resolution.	Article 7
Number of original copies	It does not mention the number of original copies.	Mentions the number of the original copies of the contract [varies based on the gov. entity] and who shall keep them.	Article 8

5.1.2. General Conditions

The new contract introduces additional definitions, including the Government Procurement and Tendering System, executive register, site conditions, specifications, materials, Bill of Quantities (BoQ), intellectual property, day/days, portal, and hidden defects [Article 1]. In addition, it incorporates new clauses such as Conflict of Interest [Article 8], Intellectual Property [Article 10], Local Content [Article 12], Joint Venture [Article 14], and Negotiation [Article 18]. These additions expand and clarify the contractual framework, covering a range of important aspects related to definitions and specific clauses. The subcontracting provisions are more detailed, specifying the approval process and involvement of qualified subcontractors. Notably, there is a shift in emphasis from the “Power of the Engineer” to defining limits for the government entity’s representative. As shown in Table 2 the updates in general conditions enhance clarity and address various aspects within the contract.

Table 2. Comparison of the new and old contract’s general conditions.

Criteria	The Old Contract	The New Contract	Reference
Difference in the subcontracting clause: difference in the power of engineers and government entity representative clauses	The subcontracting clause is less detailed than the new one.	The subcontracting clause is more detailed.	Article 4 and Article 13.
	Highlights and emphasizes the clause of the “Power of the Engineer”.	Highlights the limits of the power of the government entity representative.	Article 2 and Article 32 until 34.

5.1.3. Other Sections

The new contract introduces specific provisions for resolving disputes, the suspension of work, changing orders, and penalties. In terms of dispute resolution, the new contract emphasizes amicable meetings between the government entity and the contractor, with the option of forming a dispute resolution council if needed. The old contract, on the other hand, simply refers disputes to the Board of Grievances. Regarding the suspension of works, the new contract specifies duration and compensation, while the old contract does not provide such details. The new contract also establishes a time frame for responding to change orders, whereas the old contract does not specify a duration. In terms of penalties, the new contract sets a cap of 20%, with 10% allocated for violations of the Local Content Preference Regulation, while the old contract imposes a penalty of 10% without mentioning additional supervision fees during delays. These updates in the new contract (Table 3) bring more clarity and specific guidelines compared to the old contract.

Table 3. Comparison of other sections in the old contract and new contract.

Criteria	The Old Contract	The New Contract	Reference
Resolving Disputes	It is very broad in the old contract	Resolving disputes is detailed	Article 57 and Article 59
Suspension of Works	No duration has been specified	Suspension of works has specified durations	Article 32 and Article 62
Change Order	No duration was specified in the old contract	The number of days the contract has to answer to the gov. entity representative in case of a change order has to be specified	Article 44
			Articles 61–64

Table 3. *Cont.*

Criteria	The Old Contract	The New Contract	Reference
Penalty	The old contract has a 10% penalty	The total cap of the penalty in the new contract is 20%, with 10% for the local content. There is no mention of the additional fees of the supervision fees when there are delays	Article 39 and Article 40 Financial Terms—Part 4

6. Challenges in Public Tender Processes

The public tender process is reasonably detailed and clearly structured. When the owner's committee decides to invite bids, the entity called the executive committee has the commitment to handle the actual tendering process. First, the proper documents are prepared, specifying the goods, services, and other commitments needed. Interested parties are asked for inquiries and clarifications, and these are shared with all the other firms. Everybody interested must accept the same procurement documents. Once the period for inquiries is complete, the opening pack is simplified and undertaken in public. Every acquirer records the names of the suppliers who purchased the bidding documents. The procurement is established in a way that enables interested individuals to take weeks for this at various Ministry of Finance websites. The date and location of the receipt for the submitted bids are recognized in the invitation. The plan should also display complete information on the submission date of the tender and draw the documentation office, project referral, and the related tender abstraction address [1,5,37]. Public tender processes in Saudi Arabia are commonly applied to contracts worth millions of riyals. They follow a rather unified procedure that is managed by the Ministry of Finance and requires the submission of detailed documents and qualifications from interested parties. The Ministry of Finance comprises the owner's committee and the executive committee. The process is provided by organizing the procurement of goods and services in a way that gives every interested supplier an equal opportunity to bid. Nevertheless, the public tender process increasingly embraces challenges, and Saudi organizations experience them commonly, no matter what preparation and effort they make. To achieve the maximum level of efficiency in the bidding or tendering process, the least number of challenges would be reduced to the least number of chances [20,21]. Growing awareness of the challenges experienced in Saudi Arabia's public tender procedures for public works projects has emerged in recent years. These challenges have prompted a reevaluation of existing models and the development of new frameworks to address the issues. One of the main challenges in public tender processes is the lack of transparency and accountability, which has led to a call for stricter regulations and oversight measures. As a result, the Saudi government has taken steps to enhance the transparency and accountability of public tender processes through the implementation of new regulations and the establishment of monitoring mechanisms. These measures aim to prevent corruption and ensure fair competition among bidders. Additionally, the new regulations and monitoring mechanisms aim to improve the efficiency and effectiveness of the public tender processes, promoting a more competitive and transparent environment. This is expected to attract more qualified contractors and result in better value for money in public works projects [6]. The lack of standardization and transparency in the bidding process poses significant challenges in ensuring fairness and equal opportunities for all participants. Furthermore, the absence of clear guidelines and criteria for evaluating bids makes it difficult to assess the qualifications and capabilities of potential contractors. The lack of transparency in the tender processes also raises concerns about fair competition and the possibility of favoritism. In addition, the ambiguous documentation and vague evaluation criteria contribute to the complexity and ambiguity of the tender processes, hindering the objective selection of the most qualified contractors. The lack of standardized

procedures and inconsistent regulations further complicate the tender processes, creating a breeding ground for disputes and legal challenges. Table 4 summarizes the challenges found in new models and eProcurement.

Table 4. Challenges to the new procurement models.

Method of Contracting	Challenges	Ref
1. Public Tender/General Tender	Challenges in public tender processes include the need for swift approval of budgets, the complexity of the process itself, the complicated and difficult rules and regulations governing public tendering, the absence of a centralized database for tenders and contracts, and the stringent requirements and conditions set by government agencies.	[1] [5] [41]
2. Limited Tender/Selective Tender	Challenges in limited tenders include the limited number of participants, the need for local suppliers to register and qualify before being considered, the requirement for external suppliers to be paid by local banks in Saudi Arabia, the necessity to demonstrate that the required goods or services are not available, and the time-consuming and resource-intensive process of identifying and selecting suitable suppliers for limited tendering. Moreover, the negotiation process with suppliers may be complex. To address these challenges, Saudi Arabia can adopt strategies such as streamlining the qualification process, promoting collaboration with local suppliers, establishing clear communication channels, leveraging technology for efficient supplier evaluation, and fostering long-term partnerships with reliable suppliers.	[1] [15] [34]
4. Direct Purchase/Direct Procurement	Challenges in public direct procurement processes include the availability of required materials or products from local suppliers, the limited budget for direct purchases, ensuring the essentiality of direct purchase, alignment with the entity's work and objectives, and avoiding excessive quantities.	[1] [5] [26] [70]
3. Two-Stage Tender	Challenges in public two-stage tender processes include the inability to negotiate prices after technical evaluation, the requirement for complete specifications, and the unavailability of new foreign suppliers. In accordance with Saudi laws and regulations, the price cannot be modified after technical evaluation. Therefore, it is crucial to ensure that all necessary information is included in the first request for a quotation (RFQ). Complete specifications are also essential for the successful procurement of goods or services. If the specifications are not fully detailed, the supplier may not be able to provide an accurate quotation, which could lead to disqualification. Additionally, the preference for local suppliers is a challenge when it comes to the inclusion of new foreign suppliers. However, it is important to note that in cases where local suppliers are not available, it is still possible to invite reputed foreign suppliers to participate in the tender process. These challenges highlight the importance of thorough planning and adherence to the guidelines outlined in the Saudi Arabia Financial Rules and Regulations.	[41] [42] [71] [72]
5. Framework Agreement	Challenges in public framework agreements include the involvement of multiple government agencies, each with their own rules and regulations, making coordination and standardization difficult. Compliance with local content regulations can also be a challenge. Additionally, the lack of a standardized evaluation process for suppliers and the limited budget for establishing long-term contracts can further complicate the procurement process.	[43] [44]
6. Electronic Reverse Auction	Challenges in public electronic reverse auctions include the need for specific regulations and requirements that differ from other countries, customization and localization to meet the specific needs of the Saudi Arabian context, awareness campaigns and training programs, limited availability of electronic reverse auction platforms, and the complexity of the registration process for suppliers. Suppliers may face difficulties in completing registration requirements and obtaining necessary approvals.	[1]
7. Industry Localization and Knowledge Transfer	Challenges in the public transfer of industry and know how include the requirement for foreign firms to establish a manufacturing facility in Saudi Arabia, ensuring the production meets genuine quality standards, and producing goods that are in demand in the Kingdom. This process can be complex and time consuming, requiring significant investment and coordination between the foreign firm and local stakeholders. Additionally, the localization of industry and knowledge transfer processes may involve cultural and language barriers, as well as differences in business practices and regulations. Overcoming these challenges requires effective communication, collaboration, and a deep understanding of the local market and its dynamics. The challenges in the contracting competition method in Saudi Arabia include the difficulty of proving the necessity of the work to be executed, the limitation of necessary expenses to a minimum, and the requirement for expenses to be included in the budget. These challenges ensure that government funds are allocated efficiently and transparently, preventing any misuse or misappropriation of public funds.	[1]
8. Competition (Contest)		[46]

Sustainability—Local Content

It can be observed through studying the new contracts that not much research has been performed on sustainability. New contracts can explicitly address and prioritize these important considerations, promoting environmentally responsible practices, economic development, cultural preservation, and resilient project execution. There is an opportunity to advance the contracts by incorporating a dedicated section that explicitly emphasizes sustainability. This section will highlight the aspects of reducing the carbon footprint

by sourcing materials locally, where transportation distances are reduced, resulting in lower carbon emissions and a reduced environmental impact. This approach aligns with climate change mitigation efforts. Also, it supports local economies by creating job opportunities, stimulating businesses, and contributing to economic growth. This promotes socio-economic sustainability, improving the well being of communities and livelihoods. Preserving cultural heritage by incorporating local materials, designs, and skills in projects contributes to the preservation of cultural heritage and promotes local cultural identities, knowledge, and practices, thus enhancing social sustainability. Enhancing supply chain resilience by relying on local suppliers enhances supply chain resilience. It reduces vulnerability to transportation delays, trade barriers, and geopolitical instabilities. This will ensure that the new projects' activities align with sustainable development goals and contribute to a more sustainable future.

7. Research Gap

In recent years, there has been a growing need to analyze and understand the specific challenges faced in Saudi public works contracts. This research aims to fill this gap by examining the key challenges in public tender processes in the context of Saudi Arabia's public works contracts. By identifying and discussing these challenges, this research seeks to provide valuable insights and recommendations for improving the efficiency and effectiveness of public tender processes in Saudi Arabia. Moreover, this study explores the prospective recommendations to overcome these challenges and enhance the transparency and fairness of the public tender processes within Saudi Arabia's public works contracts. The outcomes of this study will contribute to the existing body of knowledge by offering practical recommendations to policymakers and stakeholders involved in public works contracts in Saudi Arabia. Additionally, the research outcomes will provide a comprehensive understanding of the current state of public tender processes in Saudi Arabia and offer insights into potential areas of improvement for future policy development. By examining the challenges and potential areas of improvement, this research aims to contribute to the overall progress of Saudi Arabia's public works contracts, ultimately benefiting the country's infrastructure and economic growth. Furthermore, the analysis of these challenges will contribute to a more efficient and transparent public tender process, attracting more local and international contractors to participate in Saudi Arabia's public works contracts. This, in turn, will not only enhance competition and drive down costs but also promote innovation and ensure the successful completion of public works projects in Saudi Arabia. Additionally, the increased participation of local and international contractors will contribute to the transfer of knowledge and expertise, leading to the development and growth of the construction industry in Saudi Arabia.

8. Conclusions and Recommendations

The concern of the Saudi government regarding new models of procurement methods has led to significant changes in public works contracts. These changes aim not only to streamline processes but also to address challenges associated with sustainable, socio-economic, scientific, and integrated approaches to development. The implementation of these models contributes to greater efficiency and transparency in Saudi Arabia's public works sector while fostering sustainability through enhanced accountability and reduced corruption in public works projects.

Moreover, these recent models have fostered a more competitive environment among contractors, leading to cost savings, better project outcomes, and alignment with sustainability goals. This research evaluates these models and their potential impacts, noting that they provide significant improvements in public procurement practices. The newly

revised Saudi public works contract demonstrates progress in several areas. Notably, the contract now includes detailed provisions that support the quantification, measurement, and monitoring of sustainability within projects. Specific tools, policies, and laws relating to sustainability are embedded, ensuring alignment with global standards for sustainable development.

The contract's improved structure enhances governance and project management, introducing predictability and transparency through precise timelines for approval and payment processes. Additionally, the role of engineers is now explicitly defined, ensuring a clear delineation of responsibilities that promote accountability and efficiency. Handover procedures emphasize sustainability by facilitating smoother transitions between project phases and improving resource utilization.

To manage these challenges, it is recommended that the government and relevant authorities collaborate closely with foreign consultants and legal specialists to ensure alignment with international best practices and sustainability standards. This collaboration will help Saudi Arabia's public works contracts maintain compliance while fostering socio-economic development. It is crucial to use sustainability tools and frameworks to evaluate the long-term economic, environmental, and social impacts of procurement processes.

Further research is needed to assess the practical implementation and efficiency of these models within the Saudi context. Studies should investigate the role these contracts play in achieving sustainable development goals, including their ability to improve the cost effectiveness and quality of public infrastructure projects. Additionally, exploring sustainability policies, industry localization, and knowledge transfer can help enhance the integration of sustainable practices across construction projects. Challenges such as cultural norms and bureaucratic procedures should be examined to ensure smooth implementation.

Future research should focus on evaluating how these new models impact project outcomes, contractor performance, and socio-economic development, along with comparative analyses of other countries' public works contract systems to identify best practices. By addressing these areas, Saudi Arabia can define, quantify, measure, and monitor sustainability in public works, thus contributing to its sustainable development vision.

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