

An Investigation into The Systems Used to Select Contract Forms for Construction Projects in Kuwait.

A Thesis Submitted in Fulfilment of the Requirements for the Award of the Degree of **Doctor of Philosophy (Ph.D.)** in Civil Engineering

by

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Author's Declarations

I declare that the research in this thesis is the author's work and submitted for the first time to the Post Graduate Research Office at Brunel University London. The study was originated, composed, and reviewed by the mentioned author in the Department of Civil and Environmental Engineering, College of Engineering, Design and Physical Sciences, Brunel University London, UK. All information derived from other works has been referenced and acknowledged.

> Abdulaziz Almutairi 10th May 2024



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Abstract

The construction industry plays a vital role in the economic development of Kuwait, and the selection of appropriate contract forms for construction projects is a pivotal decision that directly impacts project outcomes. This research aims to investigate the existing system for the selection of contract forms in Kuwait's construction projects and develop strategies for improving existing practices. The objectives of the research included: a critical analysis of the existing system in place for the selection of contract forms on construction projects in Kuwait; the development of a conceptual framework on best practices for contract form selection; proposing and validating strategies for improving contract form selection process in Kuwait. Kuwait's "New Kuwait 2035" vision has positioned the construction sector as a strategic priority for economic growth and development. However, the existing system for selecting construction contract forms faced challenges related to project delays, cost overruns, and contractual disputes. Motivated by the need to enhance the efficiency and effectiveness of the construction industry, this research undertook a comprehensive analysis of the current state of construction contracts in Kuwait. To achieve the research objectives, a mixedmethods approach was adopted combining a comprehensive literature review, quantitative data collection through questionnaires from construction professionals, and qualitative data collected via in-depth interviews with experts and stakeholders in the Kuwaiti construction industry. The research revealed that various construction contract forms are prevalent in Kuwait, Standard domestic form (CAPT forms) with Design bid build and lump sum contracts being the most commonly used. Selection of contract forms often lacked a systematic approach and was influenced by factors such as project type, complexity, and client preferences.

The survey data reveals that the current contract selection process in Kuwait faces challenges related to inefficiencies, risk allocation and resource mismanagement. The qualitative findings echo these concerns, indicating the importance of a new approach. Furthermore, a critical analysis of the existing system identifies shortcomings in contract selection processes and risk allocation. The findings of this research have significant implications for Kuwait's construction industry. The development of a systematic framework for contract form selection is crucial for enhancing the sector's efficiency, reducing disputes and optimising project outcomes. Real Options Theory guides contract selection, treating projects as options to manage choices over



time. In Kuwait's uncertain construction projects, ROT integration empowers stakeholders to evaluate contracts strategically for long-term success. The research contributes to bridging the existing knowledge gap in the current method used for selecting contract forms by introducing a strategy framework that integrates theoretical and legal frameworks to select the suitable type of contract form related to the nature of the project, size, type, sector, responsibility and funding sources by using a Multi-Criteria Decision Making (MCDM) approach.



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List of Abbreviations:

Abbreviation:	Definition
DBB	Traditional Design Bid Build
DB	Design and Build
вот	Build Operate Transfer
BOOT	Build Own Operate Transfer
РРР	Public Private Partnership
F.M	Facilities Management
GMP	Guaranteed Maximum Price
GCC	General Condition of Contract
САРТ	Central Agency of Public Tenders
MPW	Ministry of Public works
ΡΑΙ	Public Authority of industry
PAHW	Public Authority of Hosing welfare
MCDM	Multi-Criteria Decision-Making Process
АНР	The Analytic Hierarchy Process
FIDIC	International Federation of Consulting Engineers
JCT	The Joint Contract Tribunal
AIA	The American Institute of Architects
ROT	Real Option Theory.
TCE	Transaction Cost Economics
TOPSIS	Technique for Order Preference by Similarity
ELECTRE	Elimination and Choice Expressing Reality
V.O	Variation order.



CHAPTER ONE Introduction



1 Introduction

Selecting the right contract form is a pivotal juncture in the contractual process, wielding profound implications for all parties involved. In the complex web of obligations, the chosen contract form stands as the guiding beacon, or guidance for the project, with short- and long-term impact on projects (Acharya, 2006). The construction industry factors that influence contract selection span across construction methods, design intricacies, subcontracting intricacies, phased design and construction, client-specific equipment installations, and more, each contingent on the project's unique complexities (Ansley, 2021). The array of contract types extends from fixed-price contracts to cost-reimbursement contracts and unit-rate contracts, each of them adaptable to cater to the specific demands of a project (Chan *et al.,* 2021).

Colledge, (2018) stresses contracts must meet the critical criteria of validity and the availability to qualified parties. In that context, it becomes abundantly clear that the choice of the right contract plays a pivotal role in shaping the success of any construction project, rendering the selection process a complex interplay of considerations. The inception of this intricate process commences with the specification of the procurement approach. This step lays the foundation for defining the project's requirements in alignment with the contracting authorities' vision. The selection of the contract form is traditionally influenced by the bid price, which tilts the scales in favour of the lowest bidder (Myeong *et al.,* 2018). The contract selection process must prioritise fairness and transparency, especially in design-build projects, which often require significant time and resources. The performance of projects is subject to various factors, with procurement-related aspects holding significant sway. In contrast, in traditional design-bid-build projects, owners procure design and construction services separately. The selection process for these projects follows a well-established pattern: design firms are usually chosen based on qualifications, while construction firms are selected based on price via the submission of sealed bids (Jin et al., 2013). However, reliance on one-criterion causes complexities, such as lower costs, which may not always equate to higher quality work. To navigate this conundrum, many nations, including Kuwait, have introduced bidding and tender laws that incorporate the broader concept of the most economically advantageous bid into many contract forms.



1.1 Background about Construction industry in Kuwait:

Kuwait's construction sector has over the years, emerged as a dynamic and vital component of the nation's economy, characterised by a diverse range of projects spanning infrastructure, residential, commercial and industrial developments. Central to this vibrant sector are the construction contracts that serve as the glue holding together the intricate web of stakeholders, from contractors and clients to government entities and investors. The selection, formulation, and execution of these contracts play an indispensable role in the successful completion of construction projects within Kuwait's borders. Kuwait contributes significantly to the global energy market (IMF, 2021). It has rich oil reserves that account for approximately seven percent of the global total (Times Kuwait, 2021). The petroleum industry plays a pivotal role in Kuwait's economy, generating a substantial portion of the nation's export revenue and government income. As of recent years, 95 percent of Kuwait's economic sustenance has been petroleum-dependent (Burney et al., 2018). However, the vulnerability of such an oil-dependent economy became glaringly evident as global demand for crude oil began to wane (Kuzman *et al.*, 2017). A global shift towards alternative energy sources and economic uncertainties led to a reduction in oil prices, causing a 3.7 percent decline in revenue from the oil industry. Furthermore, production experienced a significant decrease, plummeting by approximately 15.5 percent, while the average export prices per barrel witnessed a sharp decline of 33.3 percent (McKinsey, 2023). In response to these economic challenges, the Kuwaiti government recognised the urgent need for economic diversification. With increasing pressure to shift away from heavy reliance on oil, the government took proactive steps to boost non-oil revenues, which witnessed an impressive 11.1 percent growth in 2009 (McKinsey, 2023). The construction sector emerged as a focal point for this diversification strategy. Massive investments were directed towards the construction industry, and this sector received substantial attention. Soliman (2017) observes the government's approach to spending is systematic, with an annual expenditure target of around 10 percent allocated to public construction projects, primarily managed through institutions like the Ministry of Public Works (MPW) and the Ministry of Planning (MOP). In recent years, the Kuwaiti construction industry has experienced a remarkable expansion. The launch of numerous mega projects, such as railway lines, roads, and stadiums, which reflects this growth. These ambitious projects are emblematic of Kuwait's commitment to infrastructure development and modernisation. Moreover, Kuwait's



development plan is geared towards transforming the nation into a regional financial and trade hub by 2035, mark (Kuwait Government, 2023). The government allocated a substantial budget for major development initiatives. This allocation is intended to fund projects encompassing core infrastructure, housing and utilities, thereby propelling Kuwait's progress towards this ambitious goal.

The fiscal year 2020/2021 Kuwait witnessed a considerable allocation of capital expenditures to the construction sector. A comprehensive breakdown of these investments reveals that around 79 percent of these funds were directed towards construction projects, while the remaining 21 percent were earmarked for non-construction projects (IMF, 2022). Delving into the specifics, the Ministry of Public Works assumed a pivotal role in the construction landscape, accounting for the lion's share of construction projects at 32 percent. The Ministry of Electricity and Water followed closely with a 17 percent share, while the Ministry of Health accounted for 12 percent (IMF, 2022). The remaining government agencies of Kuwait collectively contributed to the rest of the construction projects (IMF, 2022). Additionally, supervisory authorities have vigilantly monitored contracts and activities within the construction sector. Their oversight enshrined a substantial 40 percent or 458 observations, demonstrating the sector's heightened scrutiny. Notably, the Audit Bureau, charged with ensuring compliance and accountability, focused on discrepancies and imbalances in construction projects, tenders and contracts. These observations frequently underscored issues rooted in the lack of sound financial and technical planning for construction projects and contracts. It is apparent that a critical need exists for comprehensive research to address these shortcomings in the project award system. Such research would emphasise the need for well-defined cost structures and prices, along with a robust foundation for project evaluation (Kuwait National Assembly, 2020). The aim is to reduce wastage of resources and curb excessive spending. This intensified focus on construction projects can be attributed to Kuwait's ambitious New Kuwait 2035 plan, encompassing a wide array of endeavours. These projects span across infrastructure development, residential projects and vital sectors such as higher education, welfare, and healthcare. With a vision as sweeping as this, the significance of an effective procurement system for construction contracts cannot be overstated (Kuwait Government, 2023). The research in question seeks to provide evidence-based recommendations for enhancing the conditions of construction contracts within Kuwait. An improved procurement system will



play an instrumental role in realising the goals outlined in the New Kuwait 2035 vision with greater efficiency and fewer challenges. The interplay of capital investments, government oversight, and Kuwait's strategic vision for economic diversification underscores the importance of our research focus on contract form selection. It is within this context that we delve into the intricacies and implications of contract choice within the country's burgeoning construction industry.

This contractual agreement hinges on a fixed-price payment method, as evidenced by Almutairi, (2016). However, an in-depth analysis reveals that this particular contract form lacks the sophistication required for handling technically complex and large-scale construction projects. One of the most pressing issues associated with the existing contract selection process is the disproportionate and often inappropriate allocation of risk. The straightforward clauses within the SDC are ill equipped to address the intricate demands of modern construction projects, potentially leading to imbalanced risk-sharing arrangements. Most tender selection methods in Kuwait favour the lowest prices; the chamber of central tendering is responsible for tender management (Hughes et al., 2015). This approach is consistent, with the "legal general contracts" document for both private and governmental projects in Kuwait's construction sector since its introduction in 1971 (OPEC, 2021). While there have been periodic adjustments to this document, its fundamental clauses have remained relatively unchanged over time (Soliman, 2017). Considering these observations and the pressing need for more effective contract selection, this research is poised to introduce alternative criteria that can enhance the existing contract selection system. The primary focus will revolve around examining various parameters for selecting contract forms, with specific emphasis on payment terms and the project delivery system. This research endeavours to establish a more nuanced and robust approach to contract form selection that can adapt to the evolving landscape of construction projects in Kuwait and more effectively allocate risk, promoting fair and balanced contractual agreements. This study aims to offer valuable insights to significantly improve the construction project landscape in Kuwait and align it with international best practices that foster growth within the broader context of Kuwait's ambitious economic development initiatives, For example, the New Kuwait 2035 vision. The Kuwaiti government, in line with its vision for economic diversification, has committed substantial investments to fund construction projects. Notably, government-driven projects are a significant component of the construction



landscape in Kuwait; "New Kuwait 2035" is a national development plan aimed to turn Kuwait into a regional financial and cultural hub. This program is responsible for the panning of multiple, such as Silk City, the Kuwait National Cultural District, and major infrastructure improvements (Harness *et al.*, 2018). New residential areas, like South Saad Al Abdullah City, have been planned to meet the housing demands of the population.

Public sector entities such as the Ministry of Public Works, Kuwait Municipality, and Public Authority for Housing Welfare have been actively involved in construction initiatives. Publicprivate partnerships (PPPs) have also been utilised to execute projects efficiently. The regulation of construction contracts in Kuwait is governed by the legal system and specific construction laws and regulations (AlSabah and Abdulraheem, 2021). Key regulatory bodies in Kuwait, such as the Central agency of public Tenders (CAPT), provide guidelines and set standards for public construction contracts. Additionally, Kuwait has laws and regulations for commercial contracts, such as the Commercial Code and Civil Code, which have implications for construction contracts. The Kuwaiti construction industry can be categorised into public and private sector projects. In the public sector, construction contracts are primarily initiated by government entities and ministries for infrastructure development, public facilities, government and residential buildings. Conversely, the private sector encumbers several projects such as mixed-use developments commercial and residential developments. Both sectors employ various forms of construction contracts tailored to their specific requirements. It boasts several major players, including government agencies and the private sector construction companies and international contractors. These entities engage in diverse construction projects that span from housing developments, transportation infrastructure, and industrial facilities to commercial and leisure projects. The financing of construction contracts in Kuwait is a critical aspect. Many projects are financed by government budgets, oil revenues, and state reserves (Bunni, 2013). In recent years, Kuwait has also explored Public-Private Partnerships and foreign investment to finance various projects. This shift in financing mechanisms has implications for contract structures and risk allocation. It is worth noting that the construction industry has consistently contributed around 5-6% of Kuwait's GDP in recent years (Chappell, 2019). The Kuwaiti government's investment in infrastructure projects is projected to be approximately 34 billion Kuwaiti dinars (over 100 billion USD) in the coming years, indicating the sector's significance.



1.2 Problem Statement

The contract form is a pivotal decision that significantly impacts the success, costeffectiveness, and overall outcomes of such projects (Acharya, 2006). Therefore, there is need for new studies and research which could highlight the connection between the contract selection process and contractual problems. Thus, the author will be examining the ways that would allow these issues to be identified as well as resolved within Kuwait. Currently, evidence is lacking within published literature of research concerning the critical analysis of the contract selection system within Kuwait. The goal of this research will be to address that gap by providing a set of recommendation based on evidence so that the weaknesses can be mitigated, and the strengths can be built upon.

Previously, explanations have been provided on how the system which is currently being utilised for the selection of the type of contract that has had a substantial impact on the interfaces of multiple construction projects between the involved parties (Altabtabai,2002). It is evident that there is a literature gap in terms of the current understanding of the contract selection process and its utilisation within the Kuwaiti construction sector. It is also clear that Kuwait has had surplus of contracts which were developed poorly and that had an adverse and subsequent consequential effect on the construction projects' performance (IMF, 2021). In addition, the rather simple clauses in the standard form struggled to cope with large and technically complex projects. Overall, recommendation from Almutairi (2016) included the introduction of a broader range of standard contract forms, project delivery system and payment terms as a means of improving the allocation of risk and strengthening the standard specification for construction works.

In light of this, the author will be reviewing the ways in which organisations within the public sector is selecting the type of contract for construction projects as well as examining the differences in this process and improving the existing system by using a real option theory within Multi-Criteria Decision Making (MCDM) approach. The outcome desired for this research is to be able to formulate the recommendations solely on the basis of the evidence so that a highly effective contract selection system can be developed within Kuwait. This particular system of public procurement would aid the nation in achieving its New Kuwait 2035 goal with higher efficiency and effectiveness (OPEC, 2021).



1.3 Research Aim and Objectives

To investigate the existing system used for the selection of contract forms on construction projects in Kuwait to develop strategies for improving existing practise.

the objectives of this thesis are:

- To Critical analysis of the existing system in place for selection of contract forms on construction projects in Kuwait.
- To Development of a conceptual framework on best practice for contract form selection.
- To Validate the framework to propose new strategies for improving contract form selection process in Kuwait.

1.4 Research Questions

- 1. What are the existing systems used to select contract forms for construction projects within Kuwait?
- 2. How effective are the existing system in ensuring success contract delivery?
- 3. What strategies are needed to improve the process of contract forms selection for the construction projects within Kuwait?

The following figure indicates the 4 key phases of the thesis including.







1.5 Project Structure & Phases

This thesis will be including 7 chapters as mentioned below:

Chapter 1- Introduction

Background, aim & objective including research questions and Problem Statement.

				+			
	Chapter 2- Literature Review						
	1	Kuwait Construction S Overview, Standard Contract Forms Sele and Effectiveness Contractual Issue	Sector d of ction of es.	Standard forms of Construction Contract Selection based on criteria's. Prior Studies on Construction Contract Selection in Kuwait	Strategies needed to imp existing system. International organizations a construction contract forms ROT, MCDM and Al	rove the opproach of selection. HP	
	Chapter 3- Methodology for Research Explicates the methodology deployed for research undertaking and provides justification.						
 R Q Data analysis (Quantitative and Qualitative) related to this Chapter. Standard form, Project Delivery System and Payment Terms 1 Specific forms used by organizations in Kuwait for construction projects. Modification the Standard contract forms and documents used on Kuwaiti Construction Project 					ion Projec		
	R Q 2Chapter 5- The effectiveness of the contract selection system in Kuwait. The decision made to select an appropriate standard form of modified contract. Systems work in those organizations. contractual problems effected as a result of the existing system for selecting contract models. Strengths and weaknesses of the system used to select contract forms for construction projects CAPT interview and observations						
	R Q 3	 <u>Chapter 6- Strategy to improve the contract selection systemin Kuwait.</u> Critical analysis of the existing system in place for selection of contract forms on construction projects in Kuwait. Development of a conceptual framework on best practice for contract form selection. Validate the framework to propose new strategies for improving contract form selection process in Kuwait. 					
_		· · · · · · · · · · · · · · · · · · ·					
	<u>Chapter 7- Discussion</u> Establishing details of the existing system in Kuwait (Secondary and Primary data) CAPT interview and observations						
		Chapter 9	- Conclu	sion Achievements and Par	commendations		
		Chapter 8- Conclusion, Achievements and Recommendations Research Background. Achievement of the research aim and objectives. Contribution to knowledge and practice. Limitations of the research and recommendation for further research.					



CHAPTER TWO Literature Review



2 Literature Review

This study examines the fundamental issues in the current system of choosing standard contract forms in Kuwait. The review of the literature highlights the different areas that the study will cover to address the objectives and respond to the research questions. Understanding all aspects of selecting a type of standard contract is vital because it reveals shortcomings and opportunities to improve them. The process of selecting a standard contract form is complex and dynamic, meaning there is no universal selection process. The uniqueness of every type of standard contract demands careful appraisal of each option. Highlighting the relevance of good practices for choosing contracts is necessary because the industry grapples with many contractual issues like disputes, claims, and so on. Importantly, analysing the needs of customers and clients can conduce to the development of feasible processes for choosing contracts.



Figure 2.1 Literature Review Conceptual Framework



2.1 Introduction.

The Kuwaiti government has taken significant steps to diversify its economy and reduce its dependence on oil, given the current trends in oil production (Nosova, 2018). This has led to a remarkable growth of the construction industry in the country. However, this industry has also faced periods of decline, such as in 2008 and between 2016 and 2018. The oil revenues have enabled the government to invest in large-scale development and construction projects, amounting to 12.6 billion USD for infrastructure-related projects that aim to enhance the country's growth and development (Akinola and Akinola, 2018). Moreover, the integration of Kuwait with its neighbouring countries has also increased the attractiveness of the construction sector for investment (Ismael and Shealy, 2018). Kuwait has many firms that have considerable expertise in construction and infrastructure. All economic sectors have participated in various infrastructure-related developments. The construction sector's output value grew at a CAGR of 5.24 percent after 2010, indicating its rapid growth. This growth is influenced by several factors, such as a favourable investment environment, diversification, competition, and trade exposure.

Kuwait has announced its new Vision 2035, which intends to further decrease the reliance on gas and oil resources. The government has undertaken many initiatives to invest heavily in this sector. One of the major investments is related to the Kuwait Development Plan, which aims to support the development of infrastructure and stimulate the economy. However, this industry faces various issues and challenges, such as rising construction costs, political instability, corruption, and others. These issues deter foreign and domestic investors from investing, which impedes the sector's growth. The construction sector suffered significantly during the recent COVID-19 outbreak, which resulted in a 7 percent decline in output in 2019. A major factor for this decline was the weakness in civil engineering and energy work. Additionally, the bureaucratic environment in Kuwait is very inefficient, which poses a major challenge for the construction of large-scale infrastructure projects (Salem et al., 2023). The building permits issued in 2020 declined by nearly 40 percent. Furthermore, the permits for industrial units and commercial buildings decreased by 57 percent and 61 percent respectively (Salem et al., 2023). The sector also faces intense competition, which offers many growth opportunities, but they are hindered by the various problems mentioned above.



2.1.1 Kuwait State Overview

Kuwait is an emirate within the Arabian Peninsula and is located between Saudi Arabia and Iraq. It happens to consist of a very unhospitable and dry desert. The nation has mainly relied on the production of oil to drive its economy. The overall economic system of the nation is a mixed one which consists of private freedom as well as governmental regulation and centralized economic planning. According to the OPEC Annual Statistical Bulletin (2021), its gross domestic product per capita is 52,060 USD as of 2019 which came to 25,290 USD during 2021 as a result of COVID-19. Similarly, the nation is of quite small size with only 17,818 square kilometres area and an approximate 4.5 million populations (OPEC Annual Statistical Bulletin, 2021). The political system of Kuwait is a semi-democratic one, which means that an emir is ruling the nation and passing laws through decrees in case parliament has no sessions. Furthermore, the emir also has the right to veto any legislation being passed as well as dissolve the parliament as he sees fit. Apart from the oil industry, the economy has diversified over the years to prevent an over-reliance on oil production alone. In light of this, financial services, in particular, have been boosted significantly in recent years. The wealth management sector has seen a major rise given the fact that Kuwait is listed as the 39th wealthiest nation (per capita) with a 0.65% growth rate around the globe (Salem et al., 2023). In addition to this, the nation has introduced a new National Development Plan, which is attempting to transform it into a hub for trade and financial activities.

After gaining independence from the British protectorate in June 1961, Kuwait became a part of the Arab League. Ever since then, there have been various ups and downs within the political situation in the region which deeply impacted Kuwait and its economy. For instance, the war with Iraq following its invasion as well as the subsequent annexation of Kuwait which put the nation decades behind in terms of economic and other progress. The second war with Iraq in 2003 was another deep blow to the nation (Sassoon and Walter, 2017). Apart from the security issues, there were also other political issues within the nation. For instance, the parliament was dissolved by the emir repeatedly since it was believed that they were not contributing significantly. However, there were often concerns that the parliament with heavy opposition was being dissolved specifically to give the emir entire control over the legislative process (BBC, 2013). Considering the history of the nation, it is evident that it has lived through a long period of struggles, which has set back its economy substantially and its



overall development has been significantly impacted especially during the past two decades following the global economic slowdown caused by the GFC.

2.2 Standard forms of Construction Contract project in Kuwait.

The author has previously mentioned the Civil Law in relation to contracts. This section will review the general rules of contracting legal articles no. (661) to no. (688). There are five rules, as follows:

- First: Providing Construction Materials.
- Second: Contractor Obligations.
- Third: Employer Obligations.
- Fourth: Abdication of Contracting and Subcontracting.
- Fifth: End of Contracting.

There are also Construction Contract Special Provisions, as stated in legal Articles no. (689) to no. (697). However, the overall quality of the construction project can be affected by the selection of the contract. Therefore, both the contractor and the project owner must have a deep understanding of contract terms and conditions to ensure that neither party feels exploited. Construction projects undergo phases that may vary across projects. Regardless, figure 2.2 shows six main phases.

Fisrst phase	Concept Design and Feasibility Study.
Second phase	Preparing of Detailed Design and Tender Document
Third phase	Procurement processes and signing the Contractor Agreement .
Fourth phase	Project Implementation and follow-up.
Flvith phase	Substantial Completion of Work and project delivery
Sixth phase	Project Operation and Contractual Maintenance Period (defects liability period)

Figure 2.2 construction project phases, (Faraj, 2020)

All the above phases affect the contract selection that occurs based on the type of project, total price, quality, and risk study. The first phase depends on the concept, project, benefit, and user for the project and what is needed for its completion. During this phase, the client



will consider a feasibility study to prepare and budget for the project. The following phase will consider the initial design for the project and prepare a consultant agreement between the two parties, the client and the consultant. The consultant agreement may include the supervision clause as an option (Al-Fares, 2000). The third phase will consider the contract form and will involve the preparation of the contract documents. In Kuwait, the Ministry of Public Works is the largest contractor in the public sector, and it prepares and modifies contract documents for most government agencies. Documents pertaining to general legal conditions and general specifications are among those used in their projects. All contract documents will be briefly described in the next section.

Published literature suggests that the most famous contract in Kuwait construction is the standard domestic form construction projects in Kuwait. Lump-sum is the most preferred payment system. The domestic standard contract has fixed conditions derived from specifications on the contract form. Kuwait construction faces the challenge of limited payment methods, specifically cost reimbursement, remeasure and fixed price (Almutairi, 2016). The standard domestic form of contract has been taken from the FIDIC contract form without any adjustments. Modified contracts are not neutral because of the ambiguous definitions of duties and responsibilities (Alessa, 2019).

Moreover, (AlSabah and Refaat, 2019) outlined three essential documents comprising tender documents, terms and conditions and specifications form the basis of contract forms in the country. The contract form deed is a vital document for the project and can be written as a brief description of the project (Chakravarty and MacLeod, 2016). It will include information such as: the deed number and date, details concerning the partners in the transaction and of the successful tender, an account of the purposes of the agreement and also a statement of confirmation by the State Audit Bureau, which will include details of promises and mutual covenants and the conditions and agreements contained therein, consisting of approximately 20 articles. In addition, there will be articles that deal with the contract documents and price, the performance bond and payment method, the covenant, the completion period, the delay penalty and finally the signatures from the contract partnership (Contract no. EPS 147, Ministry of Public Work).

The preparation of tender documents occurs in the design phase. During the procurement phase, and after the tender has been awarded, they become a part of the contract form. In addition, the tender document in all construction projects under the Central Agency for



Public Tenders (CAPT). Those will be following a five-stage which, are also handled by a technical authority, such as the Ministry of Public Works or some other technical institution. The tender documents are compromised into three main documents. The first one is "Document I: Tendering Procedures" which is outlined below: (MPW Legal Condition 2003)

- \circ Tender Notice/Invitation to tender.
- Tenderers' instructions
- Tenderer's form and Appendix.
- List of Equipment's and Machinery
- List of Contractor's Staff
- Contractor's Certificate of his Works in/out Kuwait
- Form of Initial Bond
- Form of Final Bond
- Form Of Agreement
- List of Tender Documents
- Certificates (if any)

Those documents will be described briefly by defining the steps of selecting the contract form process in Kuwait by considering the Central Agency for Public Tenders (CAPT) after this section. The contract conditions include three main documents that include the general, and specific conditions as well as the public Tender law. The three parts are integrated. The "general conditions outlines the client-defined minimum acceptable standards of contractor performance. The performance contract prescribes the responsibilities, rights and relationships of the parties (AI-Fares, 2000). Descriptions and interpretations of words like employer, contract, contractor, engineer, and contract are in general conditions. The extent to which a contractor may sub-contract work is also in the general conditions. General obligations specify the tenders' sufficiency, performance bonds, on-site inspections, and the form type of agreement. Finally, it should be stated that this document has many other conditions attached to the main contract.

The conditions attached to the main contract can include: the maintenance period, alteration additions and omissions, how the works are to be measured, the certificates and payment, and finally how the approval of the final certificates and payment after maintenance will be completed (Al Reshad and Kartam, 2005). Although most contract forms for Kuwait construction include general conditions, fixed general conditions apply where



there is only one general condition book used as a guide for all construction projects. When it comes to the specific conditions, that are separate from the general conditions; thus, there are detailed descriptions regarding the general conditions and missing conditions. Thereafter, the missing conditions are then outlined as per the nature of the project.

The Tender law was established pursuant to Law No. 37/1964 on public tenders and then attached to the Council of Ministers. That committee was concerned with the receipt of tenders in the public domain and decided how to establish them in accordance with the procedures set forth. The tender law was recently modified (Law No 49/2016) and its executive rule was issued by Decree No.30 in 2017. In addition, the Technical Conditions Documents include conditions specific to the type of work on the project (Hughes and Hatush, 2017). These conditions include technical aspects of a project, such as general specifications, practice specifications, pricing list table, drawings and appendices. For example, in road construction projects there are several specific types of work that need to be described, such as signage at the work site and their specific dimensions, traffic lights according to the required specifications, etc. (Tender No. RA/106).

The main method of procurement for construction services, used for almost all projects in Kuwait is tendering. Practising is similar to tendering but is undertaken by the employer only with the approval of the CAPT and direct contact can be used by an employer if the contract or purchase is valued at less than 75,000 K.D (Tender Law 49/2016). The tender cycle is a five-stage process in all construction projects under the Central Agency for Public Tenders (CAPT) (Figure 2.3). Apart from the CAPT, these stages are also handled by a technical authority, such as the Ministry of Public Works or some comparable technical institution.



Figure 2.3 Tender cycle (CAPT, 2023).



The contractor's prequalification is the first stage of the tender cycle. A department of the Central Agency for Public Tenders classifies all companies working in the construction industry into four categories (Table 2.1)

Category	Tender amount
First Category	Above 1,000,000 K.D
Second Category	Less 1,000,000 K.D
Third Category	Less than 500,000 K.D
Fourth Category	Less than 250,000 K.D

Table 2.1 Contractor's prequalification (CAPT, 2023)

Before issuing an invitation to tender, the CAPT will define which category of the company is allowed to apply for this tender. Furthermore, during this phase, this department will prepare a report on those companies who have already applied for the tender and will either issue a refund or accept those companies before proceeding to the next stage.

The preparation of the tender is the second phase, in which the CAPT invites contractors to compete for a particular project by placing advertisements in newspapers or magazines ('Kuwait Today'). The third phase is the bids tender, which consists of instructions to tenderers, as well as the definition of project details, including project parts and site conditions and the preparation of estimated project quantities and completion time. After the contractor has received all the instructions for tenderers, the bid form needs to be prepared to prove his ability to undertake and complete the project. The bid form must include an acknowledgement that he has visited the site and reviewed all drawings and tender documents and that his price, prequalification, list of sub-contractors and list of construction equipment are stated (CAPT, 2023). The fourth phase is where the CAPT will award the tender to the bidder who has provided the lowest price that is also in accordance with tender requirements. However, the CAPT can award a higher-priced tender if the tenderer has "an unreasonably price". (Tender Law 49/2016, article No 43). In phase five, the winning tender must also accord with the conditions laid down in the technical documents. When these conditions are fulfilled, the successful tenderer will be invited to sign the contract.

During the work cycle of the tender, the legal advice department will check the legal terms of the tender documents and contract forms. The Audit Bureau will constantly oversee the



project budget and how it is used at each stage of the project. The aim is to ensure that the amount allocated for the project is used as indicated in the price charts (Hughes & Skitmore, 2017). This section comprehensively examines the process of contract selection and formation in Kuwait's construction industry. It has three main parts: the project phases, the contract types and the tender cycle. The project phases encircle the feasibility study, the initial design, the consultant agreement and the contract form. The contract types include the standard domestic form, which is based on FIDIC, and the lump-sum payment system. The contract types also have general, specific and technical conditions, as well as the public tender law. The tender cycle includes five stages: the contractor's prequalification, the preparation of the tender, the bids tender, the award of the tender and the signing of the contract. The section also evaluates the role of the Central Agency for Public Tenders (CAPT) and the Ministry of Public Works in overseeing and regulating the tender process.

2.3 Contractual Issues in the Kuwait Construction Sector

Contractual issues are commonplace in the construction industry because of its complexity which is based on several factors that affect project outcomes. In the same context, contract management is among the key success factors in construction projects (Chakravarty and McLeod, 2017). Financial problems, issues with material, time, quality, political interference, flawed documents like inadequate or inapplicable technical specifications, administrative issues, political challenges, dispute resolution, technology use, professional ethics, and problems with the selection of materials can arise in construction projects (Hughes and Skitmore, 2017).

The implementation of public projects in Kuwait depends on the Public Tenders Law No. 49 of 2016. CAPT is the authority that oversees the public procurement activities and issues the standard form contract in Kuwait. This law has rules for various aspects of construction projects such as duration, price, quality, payment, claims, disputes, variations, performance, and termination. Its comprehensive and descriptive nature limits the opportunities for contractors who have to agree to the terms or face penalties or disqualification. It imposes strict liabilities, requirements and penalties on contractors who carry the maximum risk and costs for defects and disputes. The Public Tenders Law No. 49 of 2016 grants excessive powers to CAPT and public authorities, such as approving or rejecting the proposals, claims and variations of contractors (Hughes et al., 2015). Contractors who do not follow CAPT's instructions and decisions risk violating the contract. Therefore, the contract does not offer



enough protection and remedies for contractors. These remedies could include compensation for force majeure events, changes in law and dispute resolution mechanisms. Moreover, it has been established that the government's enforcement of tender rules is lax (Murdoch and Hughes, 2022). Consequently, the tendering process is flawed because contractors bid without ensuring sufficient provision for safety costs. Additionally, the authorities make hasty decisions that affect the long-term negatively due to pressures from the government, clients and contractors. High competition and budget cuts imply that the Kuwait government pays little attention to the contracting and tendering process, leading to problems such as a lack of dispute resolution mechanisms, clear roles and expectations, and deadlines for the project (Kartam et al., 2000; Al Sanad et al., 2011). In addition to corruption in government, the law in Kuwait provides insufficient protection to parties in a contract. Construction contracts are essential in preventing and resolving disputes that may occur during contract execution. By creating specific and clear terms and conditions for all parties in contracts, legal obligations are established to fulfil their duties and responsibilities (Kwawu and Hughes, 2005). However, contract disputes may arise due to disagreements among the parties at times. This can have a major impact on the construction project as the situation may become more complex due to the legal actions and other factors involved. Such tensions

can eventually lead to more problems in the overall project management (Lin et al., 2017). There are various provisions in contracts to protect the parties but the parties entering into the contract must be aware of the conditions involved to ensure that their interests would be protected in case any conflict arises.

When there is conflict and the interests of various stakeholders or investors are not aligned, the profits of the construction project would be negatively affected as well. However, it is impossible for the interests of stakeholders to not have conflicts as there is a large difference in their interests. According to Kwawu and Hughes (2005), the construction industry is one where conflict is inherent which makes cooperation among parties very difficult. Moreover, the uniqueness of each project makes it impossible for there to be a standard definition of success and thus each party evaluates success differently. While contracts are supposed to protect each party, there are often some areas in which they can be deficient, especially, when one of the parties is unaware of the suitability of the terms and conditions mentioned (Fellows, 2012). This leads to various issues in contracts, which are explored thoroughly in this section.



Delays within construction happen to be one of the most disputable issues within construction projects. According to Almutairi N (2016), there are six types of delays: excusable, independent, non-excusable, critical, non-critical, and concurrent delay. According to (Thorvaldsson *et al.*, 1996), the delays within construction projects indicate that these could be divided into three layers including issues caused by contractors' incompetence, issues relating to inadequacies or shortages within the infrastructure of the industry, and issues relating to consultants and clients. There are also various other factors which can contribute to the delays within construction such as payments and finances, interference of owners, unrealistic duration of contract that has been decided upon by the owners, and slow process of decision-making. On the side of the contractors, these delays may be caused by improper management and planning, lack of experience, mistakes, etc. (Olawale, 2002). However, all of these factors can be tied back to contract management considering the fact that contracts are able to describe and define all of these activities. For instance, if the contracts have been established well and in accordance with the needs and requirements of the various stakeholders and parties involved, then these contracts can ensure that there are no delays within the construction process.

Specifically, in the context of Kuwait, research by Almutairi (2016), indicated that the procedures for the pre-qualification of sub-contractors as well as contractors is one of the major contributors of construction delays. Such practices of the government have allowed the contractors to lower bidding prices significantly, which has resulted in unscrupulous practices from contractors such as undertaking certain measures to cut costs (reduction of materials being used, over-working and underpaying the employees, etc.). In case, there is no provision regarding changing orders within the contracts, then it would result in the inflation of contract prices for contractors or builders and could result in further delays due to financial issues, disputes, etc. Most importantly, it is essential for contracts to include Delay Provisions which would allow fair terms for all involved parties. Generally, this is drafted within a manner that would allow contractors to still be compensated regardless of the delays which provides them with a lot of freedom for unilateral extension of the timeline of the project.

Contract termination in the construction sector means that all legal ties between the contractor and the principal are terminated, as well as the obligations and rights that arise from the contractual relationship (Hughes et al., 2015). However, it is important to note that



not every obligation can be terminated, and some may continue to exist up to a certain time such as replacing and repairing damaged property, warranty-related obligations, and others (Hatush and Skitmore, 2017). One of the major issues related to this is the amount of risk allocated to each party when the contract was first entered into (Hughes and Mudroch, 2022). There are certain conditions that the parties agree upon when they establish a contract, where they list their responsibilities in case they want to terminate the contract; this means that certain penalties are decided for the defaulting party. JCT DB 2016, NEC4, and FIDIC all allow provisions for parties to terminate their contracts in case the project is to be suspended for a certain time period (Callahan, 2009); however, this is mostly applicable to neutral events such as COVID-19 and force majeure.

In some situations, Kuwait does not allow unilateral contract termination. Moreover, even if the contract in Kuwait has a right to termination, the termination notice would not be valid unless the contract and its amendments' wording are suitable and consistent with the applicable law. Contract termination is generally permitted in cases where the contractor fails to perform their specific obligations, delays or suspends their work without a reasonable excuse, and others. However, the process of terminating a contract is very challenging for the party, especially if they have not read and understood the language of the contract carefully. Furthermore, the environment of legal proceedings and law in Kuwait makes it very difficult to terminate a contract.

Variation orders or changes are common in the construction industry for various reasons. There is a provision in a contract that allows the parties to decide what to do in case of changes (Sunday, 2010). However, this can be a contentious issue at various points during the project for several issues that are related to contracts. Mainly, contracts need to have specific provisions for Change Orders, so all parties know how to proceed. If the change is recognized and formally regularized with the issuing of a change order, then the change specified needs to be implemented (Sunday, 2010). However, if the parties cannot agree, then this can lead to a major dispute that has negative impacts on the project execution and meeting the deadline. Given the boom in the construction industry of Kuwait until recently, the number of change orders that have been issued has also been huge. This has often resulted in cost overruns, reduced utility of projects causing inefficient infrastructure investment, low productivity of labour, and delays in the projects among others. This issue requires special attention as it can cause other critical issues such as increases in the cost of



the project, increases in the activity duration of individuals, payment issues of the contractor, and others.

One of the main challenges is the absence of the Change Order provision in many construction contracts (Soliman, 2017). This means that there are no negotiations about the terms and conditions for when changes are required. Unclear objectives and poor communication can create a serious problem in the construction industry. AlSanad (2015) found that the lack of coordination with the authorities and the unplanned interruptions were the main reason for invoking the Change Order provisions in the road projects of Kuwait. Change orders issued by contractors have indicated that the main reasons why they need change orders are the incompetence of consultants and unplanned interruptions of construction work.

Dispute resolution is the process of settling disputes between two parties (Moffitt and Bordone, 2012). The parties involved choose the method of dispute resolution, which may involve several steps before resorting to strict legal actions to resolve it (Goldberg et al., 2014). Construction has expanded in Kuwait in terms of both complexity and the number of contractors, which has drawn the attention of many players at an international level. These consultants and contractors need suitable solutions and steps in case any disputes arise between parties. Therefore, arbitration is one of the most preferred methods for resolution of disputes. However, in the case of Kuwait, arbitration has often been ignored and made very difficult. Arbitration with intervention is essentially done by the court while arbitration without intervention is done outside of the court.

As previously mentioned, arbitration is a prevalent issue in the Kuwait construction industry. Despite the existence of local and international laws that facilitate administration, the government lags in developing dispute-resolution methods compared to other Gulf counterparts. Even though parties enter into arbitration agreements, state employers have consistently pushed the arbitration process into the courts. The country remains firm in the utilisation of its local law for settling disputes while other Gulf nations have already adopted the UNCITRAL Model Law which has better dispute resolution terms.

2.4 The Contract form Selection process

The construction industry plays a pivotal role in the economic development of Kuwait, contributing significantly to its GDP and providing employment opportunities for a



substantial portion of the population. The Kuwait construction sector has also experienced rapid expansion and diversification in recent years, driven by government initiatives, private investments, and the nation's strategic geographical location (Alshammari *et al.*, 2020). That growth has created a diverse range of construction projects, each with its own unique characteristics and requirements. Consequently, selecting the most appropriate construction contract form can be a complex process influenced by a multitude of factors. That said, contracts serve as the foundation for defining the relationships, responsibilities, and obligations of all parties involved in construction projects, and as suggested by Murdoch & Hughes (2022), the selection of an appropriate construction contract form is critical to the overall success of a project.

After comprehensively evaluating the choices available, this literature review will examine contract form selection based on time, quality, size, type, funding and responsibility. The literature on construction contract selection in Kuwait reveals a rich tapestry of perspectives from various authors, each emphasising specific criteria as paramount in determining the most appropriate contract form. Notably, Cheung et al. (2016) assert that time-sensitive projects in Kuwait often necessitate the use of design-build contracts, as these enable streamlined coordination between design and construction phases, expediting project completion. In contrast, Colledge (2018) argues that for projects where quality is paramount, traditional lump-sum contracts provide the necessary framework for meticulous planning and execution.

Project size, another critical criterion, gathers significant attention in the literature. As highlighted by Beard et al. (2021), smaller projects such as residential buildings and renovations, tend to benefit from fixed-price contracts due to their simplicity and predictability. Larger and more complex endeavours, on the other hand, as posited by Francom et al. (2016), often call for construction management contracts, offering greater flexibility and adaptability in managing multifaceted operations.

The diversification of Kuwait's construction landscape into distinct project types also plays a crucial role in contract selection. According to Kabirifar & Mojtahedi (2019), infrastructure projects, such as highways and utilities, often rely on engineering, procurement, and construction (EPC) contracts due to their turnkey nature. Commercial and industrial projects, as espoused by Lam *et al*,. (2017), often lean toward negotiated contracts, allowing for customised terms and specifications aligned with specific industry requirements.



Furthermore, the manner in which construction projects in Kuwait are financed significantly influences contract selection. Shen et al. (2016) highlights the prevalence of public-private partnerships (PPPs) in large-scale government initiatives, requiring a tailored approach to contracting that reflects the diverse funding sources and risk-sharing arrangements inherent in PPPs.

The allocation of responsibilities and risks among project stakeholders emerges as a pivotal criterion in contract selection. Authors like Lee et al. (2020) emphasise the importance of clearly defined roles and responsibilities in design-build contracts, while Francom et al. (2016) argues that construction management contracts offer more equitable risk distribution, fostering collaborative relationships among stakeholders. By examining existing research and academic contributions, this review seeks to shed light on the prevalent practices and trends in contract selection within the Kuwait construction sector.

2.4.1 Time or Speed-Based Contract Selection

The time-sensitive nature of construction projects is a ubiquitous concern within the global construction industry, and Kuwait is no exception. In Kuwait, where infrastructure development and construction projects often play a vital role in the nation's economic growth, the selection of construction contract forms based on time or speed is a critical decision that can significantly impact a projects success.

Lam *et al.* (2018) underscores the significance of time-sensitive projects in the construction industry, often driven by ambitious infrastructure development plans. He advocates for the use of contract forms that prioritise speed, such as design-build or fast track contracts. DB contracts are characterised by the allocation of both design and construction responsibilities to a single entity, often a design-build contractor or a design-build consortium. One of the primary advantages of DB contracts in terms of speed is the elimination of the traditional bidding process. Lam et al. (2017) note that DB contracts often involve selecting a single entity through a negotiated or competitive procurement process, which can significantly reduce the project's overall timeline. DB contracts facilitate efficient coordination between designers and builders. Tran and Molenaar (2017) argue that this integration can enhance constructability assessments and reduce redesign phases, ultimately saving time and expediting project completion. Chan et al. (2016) emphasise that DB contracts can streamline decision-making processes. In a comprehensive review of contract selection in the Gulf region, Al-Smadi and Alhndawi (2021) underscores the significance of Early



Contractor Involvement (ECI) contracts. ECI contracts promote collaboration between contractors and project owners from the project's inception, fostering innovation and efficiency.

Fast-Track construction contracts include provisions for overlapping design and construction activities and enabling work to commence before final design completion (Fazio et al., 2018). This approach, often aligned with Construction Management at Risk (CMAR) contracts, allows projects to commence construction activities before the design is fully completed, expediting project timelines. They are well suited for projects where early occupancy or utilisation is crucial. Fisher (2020) argues that in a rapidly developing country like Kuwait, construction contracts should incorporate clear time-based milestones, incentivising contractors to complete projects efficiently and within agreed-upon timeframes. This aligns with Kuwait's ambitions to expedite project delivery and meet ambitious development targets.

In contrast, Laryea & Watermeyer (2020) argues for a more balanced approach, recognising the need to consider both time and quality. The research highlights case studies of construction projects in Kuwait where an overemphasis on speed led to quality issues and cost overruns. She suggests that while time-based contracts can be effective in expediting projects, they must be carefully structured to ensure that quality standards are upheld. Building on Laryea & Watermeyer (2020) perspective, Zaghloul & Hartman (2018) provide insight into the construction industry, highlighting the importance of performance-based contracts. They argue that such contracts can drive speed and efficiency by tying contractor compensation to project milestones.

2.4.2 Quality-Based Contract Selection

Quality is a paramount consideration in the construction industry, ensuring that projects meet the desired standards and specifications. The selection of construction contracts based on quality in Kuwait is driven by a commitment to delivering projects that withstand the test of time and meet the highest standards of safety and performance. Several contract forms have been explored in literature to address the aspect of quality in construction projects.

One widely acknowledged contract form that emphasises quality is the "Traditional Lump-Sum Contract." Under this arrangement, the contractor is responsible for executing construction works based on detailed design documents, specifications, and plans. In these contracts, the contractor agrees to deliver the project at a fixed price and assumes the


responsibility for ensuring that the work meets specified quality standards (Odeh & Bettaineh, 2015). Researchers have highlighted that traditional contracts provide a strong incentive for contractors to maintain quality, as they bear the financial risks associated with any deviations from the agreed-upon quality standards. Zaghloul and Hartman (2018) have noted that this contract form allows for meticulous planning and quality control, which is particularly important in the construction sector. (Odeh & Bettaineh, 2015) observed that traditional lump-sum contracts provide contractors with a strong incentive to deliver high-quality work to avoid cost overruns, which can be detrimental to their profitability.

Guaranteed Maximum Price (GMP) contracts represent distinct approaches to contracting that can influence the quality of construction projects. Chan et al. (2021) emphasise the advantages of GMP contracts in terms of cost control and transparency. Under a GMP contract, the contractor is responsible for delivering the project within a predefined budget, promoting careful cost management and reducing the likelihood of cost overruns that could compromise quality. GMP contracts often include provisions for quality assurance. Chan et al. (2020) note that contractors are incentivised to meet quality standards and specifications within the agreed-upon budget. This can result in a focus on achieving high-quality outcomes. GMP contracts typically involve risk-sharing mechanisms. Chan et al. (2015) argue that this shared risk approach encourages both owners and contractors to collaborate in managing risks that may affect project quality.

Integrated Project Delivery (IPD) contracts represent a collaborative approach in which all project stakeholders, including owners, designers, and contractors, work together from project inception to completion. IPD encourages early and continuous collaboration among project stakeholders, fostering a collective commitment to achieving high-quality results. IPD contracts often include shared project goals and risks. Jones (2019) notes that the alignment of interests and risk-sharing mechanisms in IPD contracts can incentivise all parties to prioritise quality, as the success of one stakeholder is linked to the success of the entire team.

It is important to recognise that the choice of contract form should align with the project's complexity and specific quality objectives. For complex and large-scale infrastructure projects, Public-Private Partnerships (PPP) have been explored as a means to ensure both quality and long-term performance. PPPs represent collaborative agreements between public authorities and private sector entities to finance, design, construct, operate, and



maintain infrastructure projects. Case studies conducted by Akintoye et al. (2018) have examined how PPP arrangements have been employed to guarantee quality in projects like the Kuwait National Rail Network. Private partners often have a strong incentive to ensure high-quality design, construction, and long-term maintenance to protect their investment. PPPs typically consider the entire life cycle of the infrastructure project. Tang et al. (2018) note that this long-term perspective encourages careful planning, quality construction, and ongoing maintenance to maximise the asset's life and value.

2.4.3 Size-Based Contract Selection

Selecting the most suitable construction contract form based on project size is a critical decision that significantly influences project outcomes. Size considerations encompass both the physical scale of the project and its associated complexities. A case study by Odeh & Bettaineh (2015) examined the utilisation of various contract forms in Kuwait's oil and gas sector, emphasising how project size influenced the choice between traditional contracts and alternative approaches.

Lump-sum contracts, also known as fixed-price contracts, have gained popularity for smallerscale construction projects in Kuwait. These contracts are characterised by a predetermined, fixed price for the entire scope of work, which offers several advantages and considerations specific to smaller projects Scholars like (Battaineh , 2015) argue that the prevalence of lumpsum contracts for smaller-scale projects in Kuwait is primarily driven by the need for cost certainty and simplicity. These contracts align with the straightforward nature of smaller projects, providing project owners with a clear understanding of the project's financial implications from the outset. However, Odeh & Bettaineh (2015) highlights that while lumpsum contracts offer cost certainty, they may not always account for potential design changes or unforeseen site conditions. Smaller projects may be more susceptible to scope changes, potentially leading to disputes over additional costs.

Several researchers, including Francom *et al.* (2016) and Colledge (2018), have noted the increasing trend of adopting the Construction Manager at Risk (CMR) approach for mid-sized construction projects in the construction industry. They argue that CMR provides a balance between the control of the project owner and the expertise of the construction manager, making it particularly suitable for projects of moderate size and complexity. Cheung et al. (2016) emphasise how CMR combines early contractor involvement with risk management, making it suitable for projects with evolving requirements or those involving complex.



designs. Some researchers, like Murdoch & Hughes (2022) suggest that the appropriateness of CMR for mid-sized projects may depend on the specific complexity of each project. While CMR offers advantages, such as cost transparency and constructability insights, it may not be necessary for relatively straightforward mid-sized projects.

Large-scale infrastructure projects often opt for Design-Build-Operate-Maintain (DBOM) contracts. This approach integrates various project phases, from design to long-term operation and maintenance, under a single contract, providing a holistic solution for complex projects. Studies by Dahl et al. (2015) highlight how DBOM contracts enable the integration of project phases, ensuring seamless transitions from design to long-term operation and maintenance, which is crucial for large, long-term projects like airports and utilities. Research by Wiss et al. (2019) has highlighted the efficiency and cost-saving potential of DBOM contracts for large-scale projects. By involving a single entity responsible for the entire project lifecycle, these contracts can lead to streamlined processes, reduced project delays, and optimised life-cycle costs. Projects of significant size and complexity often involve PPP contracts. Shen et al. (2016) discuss how PPPs attract private sector expertise and funding for large-scale infrastructure projects, which would otherwise be challenging for the public sector to undertake.

2.4.4 Type-Based Contract Selection

The Kuwait construction sector has witnessed remarkable growth and diversification, with various project types ranging from residential and commercial developments to infrastructure and industrial facilities. The choice of the appropriate construction contract form is critical to the success of these diverse projects.

Researchers like Murdoch & Hughes (2022) and Cheung et al. (2016) have noted that residential projects typically favour fixed-price contracts (Lump-Sum). These contracts are characterised by a predetermined, fixed price for the entire scope of work. Studies by College (2018) underscore the simplicity and cost predictability that lump-sum contracts offer for residential projects. The straightforward nature of these contracts aligns well with the typical characteristics of residential construction, which often involves standard designs and materials. Lump-sum contracts are well suited for residential projects where scope clarity is paramount. Cheung et al. (2016) have argued that these contracts ensure clear specifications, reducing the potential for misunderstandings or disputes between contractors and project owners.



For commercial and retail projects, Beard et al. (2021) and Al-Samadi & Alhndawi (2021) have observed a preference for design-build contracts. These contracts streamline project delivery by combining design and construction responsibilities, which is advantageous for achieving fast-track schedules, commonly associated with retail developments and commercial spaces. Commercial and retail projects often require close coordination among various components, including architectural design, interior layout, and branding. Researchers, including Lam et al. (2017) argue that design-build contracts promote seamless collaboration between the design and construction teams, ensuring that the project aligns with the client's vision efficiently. Lam et al. (2018) and Lee et al. (2018) both stress the importance of adaptability in commercial and retail projects. They concur that design-build contracts provide the flexibility needed to accommodate evolving requirements, which is vital for businesses operating in dynamic markets.

The infrastructure and public works sector often involves large-scale projects. Tang et al. (2018) and Shen et al. (2016) have highlighted the prominence of Public-Private Partnership (PPP) contracts for such projects. PPP arrangements leverage private sector expertise and funding for critical infrastructure developments, aligning with Kuwait's development goals. Akintoye et al. (2018) emphasise the appeal of PPP contracts for mitigating risk. These contracts allocate risks to the party best equipped to manage them, whether the public or private sector. Moreover, they often include performance guarantees that ensure project objectives are met.

Industrial projects, including factories and manufacturing facilities, often opt for Engineering, Procurement, and Construction (EPC) contracts. These projects often involve intricate engineering, intricate procurement of specialised equipment, and construction of state-ofthe-art facilities. Bajomo et al. (2022) and Kabirifar & Mojtahedi (2019) underline the importance of single-point accountability in industrial projects. EPC contracts offer a single entity responsible for design, procurement, and construction, streamlining communication and reducing the potential for disputes. Cheung et al. (2016) and College (2018) concur on the significance of quality assurance and performance guarantees in industrial projects. EPC contracts often include stringent quality standards and performance guarantees, ensuring that the industrial facilities meet specifications and operate efficiently.



2.4.5 Funding-Based Contract Selection

The availability and source of funding for a construction project are crucial determinants in contract selection. Kuwait's construction sector relies heavily on government funding, particularly for major infrastructure projects. Al-Tabtabai (2022) highlights the significance of aligning the contract form with the funding mechanism.

Kuwait's construction landscape often includes publicly funded projects, such as government infrastructure initiatives and public facilities. Multiple researchers, including Beard et al. (2021) and Chan et al. (2016), concur that publicly funded projects in Kuwait often lean towards design-build contracts. The integrated design-build approach streamlines project delivery, reduces procurement phases, and aligns well with government objectives for efficiency. Cost-reimbursable contracts, while less common in publicly funded projects, are explored as an option when project scope and requirements are subject to change. Alshammari et al. (2020) discuss the applicability of cost-reimbursable contracts in the public sector, where evolving project requirements may necessitate flexibility in funding allocation. For large-scale projects that require substantial funding and expertise, Kuwait has witnessed a growing interest in PPPs. Akintoye et al. (2018) emphasises the role of PPP contracts in leveraging private sector funding and expertise to develop and maintain critical infrastructure, including highways, water treatment plants, and healthcare facilities. Case studies conducted by Shen et al. (2016) showcase successful PPP projects in Kuwait, underscoring their significance in the context of funding. Some researchers have raised concerns about the complexity of contractual arrangements in PPPs. Tang et al. (2018) argue that intricate contracts can lead to disputes and delays, potentially undermining the benefits of PPPs. While PPPs provide access to private financing, there are concerns about the financial viability of projects. Researchers such as Zaghloul & Hartman (2018) acknowledge that securing private funding can be challenging, especially for projects with uncertain revenue streams.

In cases where private financing is readily available, Xenidis & Angelides (2015) argue that Build-Operate-Transfer (BOT) contracts can be an attractive option. These contracts allow private entities to invest their capital in construction projects, thereby reducing the burden on the public budget. This financial model is particularly attractive for ambitious projects like infrastructure expansion and utility development. BOT contracts often come with stringent timelines for project completion, as the private entity seeks to recoup its investment and



start generating revenue. Researchers have noted that this can lead to timely project delivery, addressing one of the critical concerns in Kuwait's construction sector (Ozdoganm & Talat, 2020). Some researchers have expressed concerns about the complexity of BOT contracts. Soliman (2017) argues that BOT contracts can be intricate and require extensive legal and financial negotiations. This complexity can lead to delays in project initiation. Specialised projects, such as research facilities or advanced manufacturing plants, may require bespoke contract forms that cater to their unique funding and performance requirements. Yee et al. (2017) suggests that cost-plus contracts or hybrid contract forms may be suitable for such projects. These contracts provide flexibility in funding allocation, allowing adjustments as project requirements evolve, which is often the case in research and advanced manufacturing projects. Hybrid contract forms, which combine elements of various contract types, can help mitigate risks associated with specialised projects. Viana et al. (2020) suggest that hybrid contracts allow for customised risk allocation, which can be essential when dealing with complex and unique projects.

2.4.6 Responsibility-Based Contract Selection

The allocation of responsibilities among project participants is another key consideration in contract selection. Research by Cheung et al. (2016) stresses the importance of clearly defining roles and responsibilities in contracts, especially in Kuwait's construction sector, where multiple stakeholders are involved. Contracts with well-defined roles, such as construction management contracts and integrated project delivery contracts, can facilitate effective project management and risk mitigation.

Design-Bid-Build contracts are commonly used in Kuwait, where the responsibility for each phase of the project is clearly defined. Al-Smadi & Alhndawi (2021) emphasise that DBB contracts provide a traditional and straightforward allocation of responsibilities. In these contracts, the owner is responsible for the project's design, followed by a competitive bidding phase where contractors submit proposals. Once the contract is awarded, the construction phase begins. This clarity in responsibility helps mitigate disputes and ambiguities. DBB contracts enable owners to maintain a significant degree of control over the project. Lam et al. (2018) suggest that this control is particularly important in Kuwait, where many construction projects are government-funded and closely monitored. Owners can ensure that project specifications are adhered to and that the project aligns with their objectives.



Design-Build contracts allocate the responsibility for both design and construction to a single entity, often the contractor. Beard et al. (2021) have explored the adoption of DB contracts in the construction industry, highlighting that this contract form streamlines the responsibility chain and can lead to shorter project durations. However, it also requires careful selection of the DB entity to ensure design and construction quality. DB contracts often involve risk sharing between the owner and the contractor. Tran & Molenaar (2017) highlight that this risk-sharing model can be beneficial in the construction context, as it encourages contractors to take on a more active role in design and construction, assuming responsibility for project outcomes. Some researchers have r raised concerns about reduced competition in DB contracts. Wiss et al. (2019) argue that consolidating design and construction responsibilities into one entity may limit the number of competitors for a project, potentially affecting cost competitiveness.

Integrated Project Delivery contracts promote collaboration and shared responsibilities among all project stakeholders, including owners, designers, and contractors. Although not as commonly used in Kuwait, researchers have explored the potential benefits of IPD contracts for improving project outcomes, such as reducing disputes and enhancing coordination (Viana et al., 2020). The construction of the Sheikh Jaber Al-Ahmad Al-Sabah Causeway has involved a consortium of contractors and designers, highlighting the collaborative approach to the responsibility allocation. IPD contracts can be complex and require meticulous coordination among stakeholders. Yee et al. (2017) point out that the success of IPD projects relies heavily on effective communication and trust building among parties, which can be challenging to achieve.

2.5 Prior Studies on Construction Contract Selection

According to Nobanee and Ellili (2015), Kuwait's construction sector has undergone a significant growth; this outlines how construction projects in general have increased significantly throughout the previous 10 years. At the same time, despite the rise in construction projects, there hasn't been development to deal with other aspects of construction contracts such as selection, procurement, and dispute resolution. In this case, the complexities and problems in construction projects ranging from its contract to the development of the building have increased proportionally (Kotb et al., 2018); this is especially true with disputes as their volume is much higher. To add on, the scale and size of the projects are also much more complex (Kartam and Kartam, 2001); due to this, managing



the project and controlling the operations as well as the outcome are exponentially more complicated.

It is mentioned by AlSanad (2017) that Kuwait's construction sector is lacking in proper systems to manage the larger scale projects; this has caused a lot of delay and other issues. According to Kartam et al. (2000), there are problems with even simple issues for largerscale projects; however, due to the bigger scale, simple issues left unaddressed can create problems for the fulfilment of the contract. As the problems happen, the stakeholders experience negative impacts whith multiple ramifications including litigation.

According to Sayed-Gharib et al. (2011), there are few ways to resolve any issues or delays in the construction project aside from litigation; once litigation happens, there are many affects to the stakeholders, which means there is an unlikely chance of any future work happening. This then hampers the potential growth and development of construction contracts and projects.

According to a study by Navon and Haskaya (2006), construction projects require effective systems to record data; this entails managing a significant amount of data on the project and the workers who are required to perform. The data also needs to outline the materials, the equipment, and any plans or drawings. Furthermore, the study also highlights how risks and events need to be documented, such as weather, work done, and any major activities completed, such as pouring the concrete. With the daily logging of the data, it is possible to then manage the project effectively.

However, Kuwait's documentation system is very poor, by which the data is not reliable and nor is it detailed enough (Jarkas and Marenjak, 2014). Furthermore, a lot of the documentation is done manually in Kuwait's construction sector and is utilised mainly for litigation purposes rather than ensuring successful project completion. With manual documentation, many important aspects of construction projects are left out, especially when considering the initial contract form (Altoryman, 2014); the documents are also illegible over time by which means important data is lost forever.

The issues also exacerbate the litigation problems; according to Alazemi et al. (2019), litigations are more complex and partially successful because of the poor documentation. This then further causes project delays and issues, by which there are partial completions without a proper conclusion in sight. This outlines the need to have a tool for collecting data



to monitor the progress as per the contract and also be able to resolve disputes in a timely manner.

There is a general lack of ability to close this gap in all of Kuwait's systems, including the formation of the contract and any dispute resolution. Therefore, Jarkas and Bitar (2012) suggest that it is the implementation phase of the contract that needs to be addressed properly first prior to starting construction; it is difficult to resolve disputes and other issues such as having agility to fix contract deviations in Kuwait's current infrastructure.

In a study by Jarkas and Bitar (2012), it is apparent that in Kuwait's construction sector, there is a lack of uniformity; in other words, there is a general lack of a proper standard in place by which the details of the contract can be accepted universally; this means that the different parties would have varying interpretations of the same contract, by which problems can continue to arise in the future. The issue here then limits the simplicity and clarity of the contract, which makes selection and implementation much more complicated. The stakeholders need to be able to read the contract and have the same understanding so that there is clarity on what is to be done and what are the potential issues (Jarkas and Bitar, 2012). It is mentioned by Alazemi et al. (2019) that there is a requirement to have a model that is simplified in preparing contracts in Kuwait. In addition to the simplicity, the stakeholders should also be able to easily follow up on the progress of the project; this is particularly important when a delay happens. According to AlSabah and Refaat (2019), in the event of a delay, it is important to convey or communicate the issue clearly to avoid misunderstandings; if the misunderstandings persist even in the face of a simple problem, it can cause further issues between the stakeholders involved.

A study by Hamouda (2020) mentions how each project has its own unique features and characteristics; these characteristics are important to consider when selecting a contract and the contractors. For instance, if a certain project may be subject to certain risks and delays, it is imperative to consider this when assessing the contract and what it stipulates. The conditions of the project are often overlooked in Kuwait, as seen in the study, by which methods need to be used in order to understand the capability of contractors and the viability of the contract.

According to Al Tabtabai (2002), one of the more important aspectsof selecting a contract is to manage the particular conditions required of the project; which is useful in helping the decisionmaker in understanding the issues and project requirements which have to be



addressed. The project conditions are one of the most important considerations by which the contract is chosen and the chance that it will succeed.

Research conducted by Al-Reshaid and Kartam (2005) mentioned that the design-build technique in construction projects is more popular in the private sector generally; this method is one by which the project delivery is handled by a single entity and there is only one contract for the entire project. However, this can be complicated for the public sector or large-scale projects. This apparent issue is highly present in Kuwait, where they are unable to deal with the larger-scale projects effectively. For these larger-scale projects to improve, Al-Reshaid and Kartam (2005) mentioned that there is a need to have pre-qualification with the technical as well as financial evaluation necessary to complete the contract requirements.

AlSanad (2015), mentioned that Kuwait is lacking a lot of awareness in the process of selecting contracts and initiating projects; this entails multiple methods and procedures by which contracts can be formed, procured, and executed. For instance, the study mentioned that there is a push towards sustainability in modern construction projects; this sustainability is an example of an area that Kuwait is lacking in based on modern standards of construction. Thus, the idea is to consider adopting some of the new innovations that are present in construction with the traditional form; however, this can become complicated as it is already difficult to procure and provide contracts as necessary.

In another study on the Kuwait construction industry by Al-Humaidi (2014), it is shown that disputes are common and rarely solved, which makes everything more complicated, including future potential work and the implementation of innovations. Some of the main reasons for disputes in a contract come from documents which are conflicting and changing the initial work scope. In Kuwait, particularly, the resolution locally done is quite poor, which ends up delaying and causing issues with the project. The typical resolution is done via litigation as well, which outlines a need for legislation on better arbitration. The study showcases that contract resolution and any claims that come from change are important to consider, especially at the start of the contract. Due to the changes and conflicts, the final cost can also be changed, resulting in further delays and problems.

It is crucial to consider MCDSS or the multiple-criteria decision support system in choosing the right contractor. The research outlines how there is a need for the system, when developing the contract and selecting the contractor to consider the unique factors and



issues involved; it entails analysing the unique aspects of each project aside from what the contractor is capable of. The research also assesses the AHP (analytic hierarchy process), which is useful in outlining the conditions of the project; as these conditions change, the AHP method is pertinent in adopting the specific needs of the project as per the conditions and providing important information for the decision-makers (Madhi *et al*, 2002).

Hassan (2016) discussed in his research that in Kuwait, the supply chains are poor for construction projects; this is why various project deliveries can be compromised, as it would end up with an incomplete end. In order to have the best outcome in Kuwait, the study suggests more focus on partnerships; this would help mitigate the risks and make better use of project delivery methods. In addition, it is important to have government support in the alliances for a project; currently, there are factors that are limiting success in project completion, including lack of commitment and trust, high risk, and limited commercial development. Furthermore, as Kuwait has no real single entity to assist in such projects, the risks are high for alliances to be formed, which is limiting the overall success rate.

Almutairi (2016) there are certain issues in Kuwait's construction industry, which are causing problems; these include a poor system of contract selection where only price is considered, a lack of ability of the contractor, payment delays, labour shortages, slow decision-making, conflicts, and wrong methods used. As a result, there are issues from the side of the contractor and the client for which the project risks are not mitigated appropriately. As the risk is not reduced, it can create a lot of problems in developing and selecting contracts as well as executing them.

Based on a study by Venkatesh (2012), there are major issues in ensuring that a contract is successfully completed in the construction sector. In this case, some of the primary issues in Kuwait include requiring better procurement techniques, new ways to deliver the project via innovation, better standards, an improved supply chain, and higher safety standards. As a result, the study shows that the methods of completing any project contract are weak in Kuwait; this would entail focusing on the method of delivery with a realistic scope so that the desired result is achieved.

A study by Soliman (2017) discussed how to improve the results of any project delivery in Kuwait's construction sector. Essentially, there are multiple factors for which there are risks involved in a lack of contract fulfilment. One of the core issues as outlined by the study is poor documentation of the contract; in this case, it would be prudent to have better



documents that outline the conditions and any delay potentials. The contracts should also be documented on a shorter basis with updates as the project is underway. Furthermore, there is also an emphasis in the study to have better reward systems in the contract; this would entail providing compensation based on success with clear incentives in place.

Brandon and Lu (2008) assert that the global construction sector is increasingly transitioning toward automation and machine dominance. Building upon this perspective, Froese (2010) presents a comprehensive array of digital innovations with the potential to revolutionize construction firms' operations, enhancing productivity and affordability. These innovations encompass the integration of digital technologies into design and construction processes, aiming to enhance visualization (Chowdhury et al., 2019) and facilitate ubiquitous access to on-site and off-site information, safety management, communication, and progress monitoring.

Hu and Castro-Lacouture (2019) highlight the role of artificial intelligence (AI) in driving project management towards greater technical automation and objectivity. They argue that AI-based solutions offer significant advantages over traditional manual methods by reducing biases and confounding factors. Afzal et al. (2021) further elaborate on AI's capabilities in monitoring, recognizing, evaluating, and predicting risks related to safety, quality, efficiency, and cost across different teams and work areas, particularly in uncertain environments. This technology has been widely adopted for risk identification, assessment, and prioritization. Additionally, process mining, an AI-enabled approach introduced by van der Aalst (2016), provides valuable insights into complex construction procedures. It enables the tracking of key workflows, prediction of deviations, detection of hidden bottlenecks, and extraction of collaboration patterns, all of which are crucial for project success and optimizing construction execution processes.

Furthermore, Zhang (2018) emphasizes the pivotal role of Building Information Modeling (BIM) in the digital transformation of the construction industry. BIM goes beyond traditional 3D modeling, offering a comprehensive repository of project lifecycle information. BIM serves as a digital backbone, facilitating the integration of AI into the construction industry. By collecting, sharing, exchanging, and analyzing data in real-time, BIM enables seamless communication and collaboration among various project stakeholders (Pan and Zhang, 2021). Smart contracts, which are programmable computer codes stored on the blockchain platform, automate contract execution and payment realisation. These codes, developed



using programming languages, facilitate agreement among stakeholders and remain immutable once replicated and archived across blockchain nodes. Each addition of a node to the blockchain network signifies the completion of predetermined project activities, achieved through consensus among stakeholders initiating transactions on the network. Failure to fulfil project activities halts the progression of the code. (Levi, 2018)

Study by Mason & Escott (2018) State that this trend is logical given the emphasis on secure payment methods, particularly in industries with relatively straightforward transaction processes such as banking, real estate, insurance, healthcare, and retail. However, the potential adoption of smart contracts in the construction industry is subject to debate due to the inherent complexities of this sector. The construction industry inherently faces numerous variables and uncertainties, resulting in higher transaction loads and complexities compared to other industries. (Marvin, 2017). For instance, in Mason's study, some participants state that the benefits of smart contracts, particularly in resolving payment issues, outweigh the drawbacks. Conversely, some participants highlighted the challenges of adoption, especially given the intricate nature of construction projects, where events cannot always be simplified to the argument outcomes in smart contract transactions.

Currently, smart contracts facilitate automatic payments based on predefined conditions but lack flexibility for adjustments or rectification during the project lifecycle due to the immutability of blockchain technology (Levi, 2018). Consequently, it is more practical to utilise and refine smart contracts primarily for simpler, smaller-scale projects. This approach allows for the mitigation of potential losses while solutions to existing limitations are developed, thus easing adoption. Financial transactions are a core aspect of contracts; they encompass more than just payments, including elements such as time, quality, and responsibilities. (Mosey, D. et al., 2016) These critical factors are not inherently accommodated within smart contracts, limiting their applicability in the construction industry. Nonetheless, the integration of smart contracts and blockchain technology into the Building Information Modelling (BIM) process enhances collaboration within projects and facilitates the acquisition of more precise data. Despite BIM's significant contributions to construction projects, it has been less effective in managing the supply of goods and services (Stockman, M. et al., 2019).

Due to the limited adaptability of smart contracts in construction projects, they are better suited for contracts with lower relational complexity. In the context of construction



contracts, it is advisable to utilise a blend of smart contracts and traditional contracts. Over time, as data sharing and exchange within the industry improves and the incorporation of machine learning or artificial intelligence drives down associated expenses, automated contract management can become feasible.

2.6 Strategies for enhancing the Contract form selection process in Kuwait.

In this section, two main methods will be employed to formulate a new system for selecting the contract form to be used in the construction industry. There will be a review of the ways that well-known international organisations such as the FIDIC, the AIA, and the JCT deal with contracts in the construction industry, as well as previous studies related to selecting the contract form by providing strategies that can be assisted in developing the current system to select the contract from in Kuwait. In the construction sector of Kuwait, the review will be a relevant guide for the researcher in the formation of strategies to enhance the process of selecting the right contract.

2.6.1 Strategy approach of construction contract selection

Construction contract selection is a multifaceted decision that influences project outcomes, including cost, quality, schedule adherence, and risk allocation (Ansley, 2021). In Kuwait's booming construction sector, the importance of adopting effective contract selection strategies cannot be overstated. The choice of contract type, procurement method, and risk allocation mechanisms can significantly impact the success of construction projects. Historically, construction contracts in Kuwait primarily followed the traditional lump-sum contract format. However, as the industry evolved, so did the need for more strategic approaches. Hughes et al. (2015) conducted a study, highlighting the importance of moving beyond traditional contracts. They argued that traditional contracts often led to disputes and inefficiencies. Hughes et al. (2015) work paved the way for a shift towards more strategic contract selection approaches.

To understand the strategic approach to contract selection, it is crucial to establish a theoretical framework. Hughes & Skitmore (2017) have emphasised the importance of aligning the contract strategy with project objectives and characteristics. They argue that a strategic approach involves a careful assessment of the project's scope, risks, and desired outcomes to determine the most appropriate contract type.



Real Options Theory

Real options have emerged as a significant tool for both valuation and strategic decisionmaking, initially gaining popularity within the oil and gas industry before spreading to various other sectors. Professionals such as management consultants and internal analysts have begun to adopt real option methodologies, sometimes sporadically and sometimes routinely, to assess major corporate investments (Borison, 2005). For example, in the assessment of investments in biomass power generation in China, a real options model was utilized. This model considered two scenarios: one with an existing carbon emission trading scheme and one without. Through empirical analysis, it was concluded that the implementation of a carbon emission trading scheme theoretically increases investment value and aids in pinpointing the optimal timing for investment in a 25-MW straw-based power generation project by 2030 (Zhang et al., 2016). Real Options Theory, originally rooted in financial economics, has gained traction in construction management for its ability to account for uncertainty and flexibility in decision-making. Hughes et al. (2015) have extended this theory to construction contract selection. Real Options Theory suggests that construction projects are real options with value that can be actively managed and adjusted over time. Hughes & Skitmore's study showcases how this theory allows project stakeholders to assess and adapt contract choices as new information emerges or market conditions change. It provides decision-makers with the flexibility to switch between contract types based on evolving circumstances.

Large infrastructure projects such as roads, airports, dams, and hospitals entail significant long-term investments with substantial sunk costs (Wesseh and Lin, 2005). To address the challenges posed by the uncertainty and evolving needs inherent in such projects, there's a growing emphasis on flexible infrastructure design. During the design phase, it's crucial to integrate flexible options, often referred to as real options, which enable adjustments to the infrastructure or services in response to anticipated changes (Wang and de Neufville, 2005). For instance, the 25th of April Bridge in Lisbon, Portugal, originally constructed with only one road deck for cars, incorporated reinforced substructures to accommodate a future second deck. Decades later, when the need arose, a second deck was added, but instead of another road deck, it was designed to facilitate rail services (de Neufville et al., 2008). Real Options Theory, initially developed within financial economics, has found application in construction management due to its capacity to address uncertainty and incorporate flexibility into



decision-making processes. Hughes et al. (2015) have expanded this theory's domain to include construction contract selection. According to Real Options Theory, construction projects represent tangible options with inherent value that can be actively managed and adjusted over time. Hughes & Skidmore's state that how this theory empowers project stakeholders to evaluate and adapt contract choices in response to emerging information or changing market conditions. It offers decision-makers the agility to switch between contract types as circumstances evolve.

Real Options Theory (ROT) is a seminal framework that the study explores to understand and enhance the process of construction contract selection. Originating from financial economics, ROT extends beyond traditional discounted cash flow analysis by recognising the inherent uncertainty and flexibility in decision-making (Garvin, 2012). ROT conceptualises construction projects as real options, acknowledging that stakeholders have the flexibility to exercise or defer decisions based on changing circumstances. This perspective acknowledges that project decisions are not static but rather dynamic, influenced by changing market conditions, technological advancements, and unforeseen events. By treating project decisions as options, ROT allows project stakeholders to assess the value of various choices and make decisions that maximise value while minimising risk. This approach aligns with the dynamic nature of construction projects, where uncertainties abound and strategic flexibility is paramount. Studies by Kartam et al. (2000) and Ford et al. (2002) have laid the foundation for applying ROT in various industries, emphasising its utility in valuing strategic investments and managing risk.

Key Concepts of Real Options Theory

Real Options Theory (ROT) offers a comprehensive framework for decision-making under uncertainty in construction projects. When integrated with other theories in project management and economics, ROT enhances the understanding of contract selection processes and provides valuable insights into risk management, strategic planning, and value creation.

Flexibility: One classic theory in project management that ROT verifies is the principle of flexibility. Just as financial options provide the holder with the right, but not the obligation, to undertake certain actions in the future, real options in project management provide decision-makers with the flexibility to adapt and adjust project strategies as new information emerges or market conditions change (Ford et al., 2002). This flexibility is particularly



valuable in uncertain environments where traditional decision-making approaches may be insufficient (Guthrie, 2009). By incorporating real options into project evaluation and decision-making processes, project managers can better navigate uncertainty and seize opportunities that arise during project execution. Moreover, ROT aligns with other classic theories in project management, such as the social-technical theory and the planned behaviour theory.

Timing: Timing plays a critical role in Real Options Theory, influencing the value of options and the decision-making process. In ROT, decisions are not made in isolation but are instead evaluated over time, considering the dynamic nature of project environments. Timing refers to the strategic assessment of when to exercise options or defer decisions based on changes in project conditions or external factors. Effective timing requires careful consideration of various factors, including project milestones, market trends, and stakeholder preferences. For instance, decision-makers may choose to delay committing to a particular contract form until more information becomes available or market conditions become favourable (Guthrie, 2009). By strategically timing decisions, stakeholders can maximise the value of their options and minimise the risks associated with uncertainty.

Risk Management: Real Options Theory provides a systematic approach to risk management, recognising the inherent uncertainties in project environments and offering tools to mitigate risks effectively. In ROT, risk management involves identifying, assessing, and responding to uncertainties that may impact project outcomes. Unlike traditional risk management approaches, which focus on minimising risks through risk avoidance or mitigation, ROT embraces uncertainty as an inherent aspect of decision-making and seeks to capitalise on it (Kartam et al., 2000). Risk management in ROT involves evaluating the flexibility of different options and selecting strategies that optimise risk-return trade-offs. For example, stakeholders may choose contract forms that offer greater flexibility to adapt to changing project conditions or mitigate risks associated with uncertain market dynamics. By integrating risk management principles into decision-making processes, project managers can enhance project resilience and improve the likelihood of success.

Strategic Decision-Making: Real Options Theory facilitates strategic decision-making in construction projects by providing a framework for evaluating investment options, assessing their value, and identifying optimal strategies for achieving project objectives. Strategic decision-making under ROT involves analysing trade-offs, evaluating alternative courses of



action, and selecting the most promising options based on their expected value and risk profiles (Ng & Bjornsson, 2004). Strategic decision-making in construction contract selection entails considering a wide range of factors, including project objectives, stakeholder preferences, market conditions, and regulatory requirements. Stakeholders must weigh the potential benefits and costs of different contract forms, assess their alignment with project goals, and identify opportunities to create value or mitigate risks through strategic decisionmaking. By adopting a strategic approach to decision-making, stakeholders can enhance project efficiency, resilience, and long-term sustainability.

Assessing Value and Project Outcomes: Central to Real Options Theory is the concept of assessing the value of various choices and making decisions that maximise value. In construction projects, this involves evaluating the potential value of different contract options based on their ability to meet project objectives, mitigate risks, and adapt to changing circumstances (Garvin, 2012). By considering the flexibility and strategic value of each option, stakeholders can make decisions that enhance project success and generate positive outcomes. Additionally, ROT emphasises the importance of considering not only immediate costs but also the long-term benefits and opportunities associated with each contract option.

Adapting to Dynamic Environments: Real Options Theory recognises that project environments are dynamic and subject to change over time. In the context of construction projects, where uncertainties are prevalent, the ability to adapt to changing circumstances is crucial for project success. ROT enables stakeholders to navigate these dynamic environments by providing a framework for evaluating and adjusting project strategies in response to emerging opportunities or challenges (Ford et al., 2002). By embracing flexibility and strategic decision-making informed by ROT, stakeholders can effectively manage uncertainty and optimise project outcomes in evolving construction landscapes.

Integration with Other Theories

Transaction Cost Economics (TCE): TCE, introduced by Coase (1937) and extended by Williamson (1985), emphasises minimising transaction costs in contract selection. TCE provides insights into understanding the trade-offs between different contract types and their associated transaction costs, such as information and negotiation costs. By considering the principles of TCE alongside ROT, decision-makers can evaluate contract options not only based on their immediate costs but also on their long-term adaptability and flexibility. TCE



provides a framework for understanding the trade-offs between different contract types and their associated transaction costs, such as information and negotiation costs. By considering transaction costs alongside the flexibility provided by real options, decision-makers can assess the overall value proposition of different contract forms and select options that offer the most favourable balance between costs and benefits (Guthrie, 2009). For example, stakeholders may use TCE principles to evaluate the costs of information asymmetry, opportunistic behaviour, and contractual hazards associated with different contract types. By incorporating these costs into decision-making processes, stakeholders can identify contract options that minimise transaction costs while maximising strategic flexibility and risk management capabilities.

Agency Theory: Agency Theory explores the relationship between principals (owners) and agents (contractors) and addresses issues of moral hazard and information asymmetry in contract selection. By aligning contract incentives with project objectives and stakeholders' interests, decision-makers can mitigate agency problems and enhance the effectiveness of contract selection processes (Ng & Bjornsson, 2004). Integrating Agency Theory with ROT allows stakeholders to consider the implications of principal-agent relationships on contract selection and project outcomes. For example, stakeholders may use real options to design contract incentives that align contractors' interests with project goals and encourage value-enhancing behaviours. By incorporating insights from Agency Theory into decision-making processes, stakeholders can design contracts that mitigate agency problems, foster collaboration, and promote accountability throughout the project lifecycle (Kartam et al., 2000). This integration enhances the effectiveness of contract selection processes by addressing behavioural considerations and aligning incentives with project objectives.

Behavioural Economics: Behavioural Economics provides insights into how individuals' cognitive biases and bounded rationality influence decision-making processes. By integrating Behavioural Economics with ROT, stakeholders can account for psychological factors that may affect perceptions, preferences, and decision-making behaviours in construction contract selection. Behavioural Economics offers a framework for understanding how cognitive biases, such as overconfidence, loss aversion, and anchoring, may influence stakeholders' evaluations of contract options and risk perceptions (Garvin, 2012). By incorporating these biases into decision-making processes, stakeholders can adjust their decision criteria and strategies to mitigate the effects of behavioural biases on project



outcomes. For example, stakeholders may use real options to create decision-making structures that accommodate bounded rationality and cognitive biases. By providing flexibility and adaptive decision-making mechanisms, real options allow stakeholders to adjust their choices over time in response to changing perceptions, preferences, and market conditions.

Social-Technical Theory: Social-Technical Theory emphasises the interaction between social and technical factors in shaping project outcomes and highlights the importance of considering human behaviour, organisational dynamics, and cultural factors in project management (Ford et al., 2002). When integrated with ROT, Social-Technical Theory provides valuable insights into how stakeholder interactions, team dynamics, and organisational culture influence decision-making processes and project performance. For example, stakeholders may use Social-Technical Theory to analyse how organisational culture and communication patterns impact the implementation of contract forms and the effectiveness of risk management strategies (Kartam et al., 2000). By considering social and technical factors alongside real options, decision-makers can identify barriers to effective decision-making, address interpersonal conflicts, and foster a collaborative environment that supports innovation and value creation.

Procurement Methods and Contract Selection

Kuwait, like many other countries, offers a range of construction contract types. The most common options include lump-sum contracts, cost-reimbursable contracts, and design-build contracts. The choice of procurement method plays a pivotal role in contract selection. Researchers have explored different procurement methods and their impact on project outcomes. Traditional procurement methods, such as Design-Bid-Build (DBB), have been widely used in the construction industry. Davies et al. (2018) highlight the prevalence of DBB contracts in construction and their historical significance. They argue that these methods offer a structured and competitive approach to contract selection, promoting cost efficiency. However, the research by Love et al. (2018) provides a nuanced perspective. They suggest that, while traditional procurement methods are common, they may not always be the most suitable option. The study highlights the need to consider project-specific requirements and objectives when selecting between traditional methods like lump-sum contracts and designbid-build approaches.



Alternative procurement methods, such as design-build and construction management, have gained traction in the construction Sector. Ruparathna & Hewage (2015) advocate for a diversified approach to contract selection. Their research argues that alternative methods can offer advantages like faster project delivery and enhanced collaboration among project stakeholders. Building on this perspective, Davis et al. (2018) explore the application of sustainable procurement methods in Kuwait. They suggest that adopting sustainability criteria in contract selection aligns with Kuwait's sustainability goals and promotes environmentally friendly practices.

Effective risk management is crucial in contract selection to mitigate potential challenges. Effective risk management starts with a comprehensive assessment of project-specific risks Hatush and Skitmore (2017) highlight the importance of risk analysis in contract selection. Their research suggests that Kuwaiti construction firms should conduct a thorough risk assessment to identify potential challenges and uncertainties associated with different contract types. Furthermore, Surahyo (2017) extends this perspective by arguing that risk profiles should guide contract selection. For instance, he suggests that projects with higher complexity and uncertainty may benefit from flexible contract types, while projects with lower risk profiles could opt for more traditional contracts. This approach aligns contract selection with the project's risk profile. Once risks are identified, mitigation strategies become paramount in contract selection. Gordon (2016) investigates how legal and regulatory frameworks can mitigate certain risks. His research highlights the role of contract clauses and dispute resolution mechanisms in managing the risks associated with contract selection. Additionally, Harper & Molenaar (2014) examine how sustainability criteria can be integrated into contract selection as a risk mitigation strategy. By promoting environmentally friendly practices, these criteria reduce the long-term environmental risks and liabilities associated with construction projects.

The legal and regulatory framework in the construction sector plays a pivotal role in contract selection and project management. Kuwait's Construction Sector is known for its intricate regulatory environment. Hatush and (2017) highlight the challenges associated with navigating these complexities. Their work emphasises the need for a deep understanding of Kuwait's legal system and compliance requirements when selecting construction contracts. Ansley (2021) states that traditional procurement methods are often preferred due to their



alignment with Kuwaiti regulations. His research indicates that these methods are perceived as more straightforward in terms of legal compliance.

Hughes and Skitmore (2017) highlight the importance of aligning contract choices with legal constraints. They suggest that non-compliance can lead to delays, disputes, and legal complications, underscoring the need for meticulous contract selection. Furthermore, Hughes et al. (2015) explore the implications of Kuwait construction law changes on contract selection. Their research highlights how amendments to construction laws can influence the selection of appropriate contract types. They emphasize the need for contractors and project owners to stay updated on legal developments.

Standard forms of contract for the execution of public projects function as models or templates that direct project implementation. They have benefits like promoting transparency and accountability and facilitating innovation and sustainability. However, they have risks like limited flexibility and avenues for potential disputes and conflicts among parties. Parties should scrutinise and review contracts to understand the terms and conditions and solicit legal advice before signing.

2.6.2 International organisation approaches of selection of the contract form of the construction project.

The construction industry is a cornerstone of economic development in Kuwait, contributing significantly to the nation's growth and prosperity. To ensure the successful execution of construction projects, selecting appropriate contract forms is paramount. This section of the literature review delves into the strategies employed in enhancing the system of construction contract selection in the Kuwait construction industry. Specifically, it focuses on the international organisations approaches to construction contract form selection, namely the JCT (Joint Contracts Tribunal), AIA (American Institute of Architects), and FIDIC (International Federation of Consulting Engineers) systems.

The construction industry in Kuwait, like many other nations, is governed by a complex web of legal, regulatory, and contractual frameworks (Almujamed et al., 2017). In this context, choosing the most suitable contract form is a critical decision that can significantly impact the project's success. It involves striking a balance between various factors such as risk allocation, project complexity, stakeholder interests, and the prevailing legal and cultural landscape. This review seeks to unravel the multifaceted nature of construction contract



selection and offer insights into the strategies that can enhance this decision-making process.

The JCT system is a well-established and widely recognised framework for construction contract selection in the United Kingdom and many other countries. It provides a range of standardised contract forms tailored to different project types and procurement routes (Chappel, 2019). Researchers have extensively studied the JCT system's effectiveness, its flexibility in accommodating project-specific requirements, and its ability to allocate risks fairly among contracting parties. The AIA has a distinct approach to construction contract selection, primarily catering to the needs of the U.S. construction industry. This system emphasises the importance of clear and comprehensive contract documents that outline the roles, responsibilities, and expectations of all project stakeholders (Surahyo, 2017). As Kuwait's construction sector continues to evolve and attract international players, it is essential to assess whether the AIA system's focus on communication and transparency aligns with the local industry's requirements. The International FIDIC system, renowned globally for its standard forms of contracts, offers a comprehensive framework that addresses various construction project scenarios. FIDIC contracts are often used in international projects, making them relevant to Kuwait's construction landscape, which frequently involves international collaboration. The review will analyse the FIDIC system's adaptability to the Kuwaiti context, considering its emphasis on dispute resolution mechanisms and risk allocation.

✤ JCT approach to contract form selection

The JCT is an organisation with a rich history and a comprehensive range of contract forms designed to regulate construction projects. Chappell (2019) provides an extensive introduction to the JCT organisation, detailing its historical evolution, objectives, and broad spectrum of contract forms it offers. These contracts are designed to streamline construction projects, providing a structured framework for defining roles, responsibilities, and dispute resolution mechanisms.

The JCT (2016) summarises the appropriateness of the types of contracts as outlined. It emphasizes that the appropriateness of a contract is affected by external factors. The choice of a contract should therefore not be based on arbitrary factors but should be based on a careful analysis of the whole situation and a consideration of the following





¹ Not for use with the Framework Agreement; ² Pre-Construction Services Agreement (General Contractor) (PCSA) can be used with these contracts; ³ Pre-Construction Services Agreement (Specialist) (PCSA/SP) can be used with these contracts; ⁴ pricing mechanism: cost plus fee; ⁵ pricing mechanism: principally lump sum

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Figure 2.4 JCT Contract Forms selection (JCT, 2023)

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According to JCT (2016), the selection of the right type of contract is contingent on mainly external factors. As a result, it is improper to make decisions, which are random in nature; instead, there is a requirement to be cautious in scrutinising the situation and accounting for the main considerations listed below:

1. Project nature and scope of works

Researchers like Chappel (2019) emphasise that the complexity and nature of the project, such as size, type, and technical requirements, play a pivotal role in contract selection. Different projects may require contracts that cater to diverse needs. For instance, a simple renovation project may require a different contract form than a large-scale infrastructure development.

2. Client control measure

JCT (2016) and Hughes et al. (2015) stress the importance of aligning the chosen contract with the level of control the client wishes to maintain throughout the project. Some contracts provide more control to the client, while others delegate greater authority to contractors.

3. Accountability

Researchers such as Harper & Mdenaar (2015) argue that accountability mechanisms embedded in contract forms should be considered. Contracts should clearly define roles and responsibilities to ensure accountability among project stakeholders.

4. Contractor appointment

The selection of a contract should also consider how contractors will be appointed. Taylor (2008) suggests that different contract forms may be better suited for various contractor selection methods, such as open tendering or negotiated contracts.

5. Final cost certainty

Achieving cost certainty is a significant concern in construction projects. JCT (2016) and Chappel (2019) assert that certain contract forms offer more predictability in terms of project costs, making them suitable for projects with strict budget constraints.

6. Project Duration

The time frame for project completion is another vital factor. Contracts should align with the expected project duration. Needham (2005) highlights how specific contracts may be more suitable for fast-track projects, while others are better suited for longer-term endeavours.



7. Limitations

Hughes et al. (2015) argue that contract forms should provide the necessary flexibility to accommodate changes and unforeseen circumstances while setting clear limitations to prevent disputes.

8. Construction changes

The potential for design changes and variations should be considered. JCT (2016) and Chappel (2008) point out that some contracts may offer more adaptability to changes without excessive administrative burdens.

9. Risk assessment

Researchers like Taylor (2008) emphasise the importance of risk assessment in contract selection. Contracts should align with the risk profile of the project, with risk-sharing mechanisms clearly defined.

10. Building and improving relationships with the supply chain

Building and improving relationships with the supply chain is crucial. JCT (2016) and Needham (2005) discuss how certain contracts may facilitate better collaboration with subcontractors and suppliers.

The advantages of JCT contracts have been eloquently championed by various scholars. Chappell (2008) and Ansley (2021) emphasise the clarity, consistency, and the established legal precedents that JCT contracts offer. These attributes are perceived as invaluable for minimising disputes and facilitating smoother project execution. Moreover, the standardised nature of JCT contracts engenders a sense of familiarity and predictability among industry stakeholders, contributing to a conducive construction environment. Nonetheless, the critique articulated by Gordon (2016) presents a contrasting perspective. It is posited that JCT contracts may not effectively address the intricacies and nuances characteristic of the Kuwait construction sector. This critique invites us to undertake a more profound exploration of the applicability of JCT contracts in Kuwait's specific context. In a nuanced discussion, Sweet (2021) highlights the necessity of customising JCT contracts to align them with Kuwait's unique context. While JCT contracts offer a standardised framework, certain provisions may necessitate adjustments to harmonise with Kuwait's legal and cultural milieu.



Customisation, therefore, emerges as a pivotal consideration to ensure that JCT contracts are optimally suited for Kuwait's construction sector. The importance of considering Kuwait's cultural and contextual factors when adopting JCT contracts is eloquently expounded by Surahyo (2017) and Hughes et al. (2015). They assert that a one-size-fits-all approach may inadequately address the diverse intricacies inherent to Kuwait's construction sector. Acknowledging the cultural nuances and legal idiosyncrasies is integral to harnessing the full potential of JCT contracts in Kuwait.

✤ AIA approach to contract form selection

The AIA, founded in 1857, has pioneered developing standardised contract documents for the construction industry. Their contract forms are widely recognised and utilised in the United States and even internationally. The AIA's approach to construction contract selection is guided by a commitment to fairness, equity, and clarity in construction project execution. Several researchers have studied and analysed the AIA's strategies in this context. Researchers such as Ansley (2021) have noted that the AIA's approach to contract selection revolves around creating contract documents that balance the interests of various project stakeholders. These documents are designed to establish clear expectations, minimise disputes, and facilitate smooth project execution.

AIA's contract documents, as highlighted by Sweet (2021), encompass a wide range of construction project types, from simple to highly complex. The AIA provides a range of standardised contract forms tailored to different project delivery methods, such as designbid-build, design-build, and construction management at-risk. These standardised forms offer a well-defined framework for defining project roles, responsibilities, and risk allocation. Scholars like Ansley (2021) have praised the AIA for its effortsto reducecontractual ambiguity through these standardised forms. In contrast, Harness et al. (2008) argued that AIA's standardised contract forms may not always be the best fit for every project. They suggested that AIA's rigidity could limit flexibility in contract selection. Harness' research highlights the need for a case-by-case evaluation of whether AIA's contract forms align with project-specific requirements. While AIA offers standardised forms, they also allow for customisation to suit specific project needs. This flexibility is appreciated by practitioners as it enables contracts to be tailored to the unique characteristics of each construction project.



One of the key strengths of AIA's contract documents, as observed by Sweet (2021), is their ability to strike a balance between the interests of owners, architects, contractors, and subcontractors. The AIA achieves this by incorporating fair risk-sharing mechanisms and clear dispute resolution procedures into their contracts. This approach aims to foster collaboration among project participants, mitigate conflicts, and ultimately enhance project outcomes. Surahyo (2017) has emphasised the clarity of risk assignment in AIA contracts, which helps prevent disputes and promotes cooperation among project stakeholders. On the international stage, Chen et al. (2018) compared AIA's approach to contract selection with similar organisations in different countries. He noted that AIA's focus on clear and comprehensive contract language sets it apart. However, Chen also highlighted that AIA could learn from international peers in terms of incorporating sustainable construction practices into their contract forms.

In comparison to other international organisations such as the JCT and FIDIC, the AIA stands out for its emphasis on customisation and risk allocation clarity. While JCT and FIDIC also offer standardised contract forms, the degree of flexibility and transparency provided by the AIA is noteworthy.

See Appendix No. 10.1 (A)

✤ FIDIC approach to contract form selection

The FIDIC Suite of contract forms is the document most often used in the construction and civil engineering industries globally. This document is often adopted for use in contractual agreements involving major international projects. It outlines the risks involved in the contracts as well as methods of mitigating these risks and other management and contractual issues and disputes (Baker et al., 2018). The FIDIC introduced a new suite of contractual forms in 1999. This suite is appropriate for use in all major civil engineering and building projects. This document includes the new red, yellow, green, and silver book. The previous copy of the red book is still, however, being used in some parts of the world.

FIDIC's Suite of Contract Forms

 Red Book: The FIDIC Red Book is perhaps the most recognised and utilised of all the FIDIC contract forms. It is primarily intended for use in civil engineering and building projects. The Red Book emphasises a balanced allocation of risks among the



contracting parties, and it outlines clear dispute resolution procedures (Bunni, 2013). It has enjoyed widespread adoption globally, particularly in regions where civil engineering and building projects are prevalent.

- Yellow Book: The FIDIC Yellow Book, often referred to as the Plant and Design-Build Contract, is tailored for use in plant and design-build projects. This contract form places a strong emphasis on the design-build aspects of projects and incorporates provisions to address unique challenges encountered in such endeavours.
- Green Book: The Green Book, officially known as the Short Form of Contract, is designed for simpler and less complex projects (Godwin, 2020). It provides a streamlined approach to contract documentation and is particularly suitable for projects with straightforward requirements.
- 4. **Silver Book**: The FIDIC Silver Book, also known as the Turnkey Contract, is structured for projects where the contractor takes on full responsibility for design, construction, and commissioning (Chakravarty et al., 2016). This contract form aims to minimise disputes and streamline project execution by placing a significant onus on the contractor's performance.



Figure 2.5 FIDIC Contract Forms selection (Guidance book, 2017)

See Appendices No 10.1 (B)



Figure 2.5 illustrates FIDIC's strategic approach to selecting the appropriate contract form. It serves as a visual guide for stakeholders seeking to align project requirements with the most suitable contract form. The accompanying table, sourced from the FIDIC Guidance Book (2017), offers detailed descriptions of various contract types and cross-references them to the respective guidance within the book, aiding project professionals in making informed choices. The extent to which FIDIC contracts are embraced within Kuwait's construction landscape has been meticulously examined by scholars like Bunni (2013) through in-depth case studies of infrastructure projects. Such research illuminates the manifold advantages of adopting standardised contract forms, particularly in the realms of risk allocation and dispute resolution. The inherent clarity and well-defined clauses of FIDIC contracts contribute to the reduction of disputes, the promotion of efficient project management, and the cultivation of a trust-based environment among stakeholders, thus fostering enhanced collaboration and smoother project execution. Nevertheless, it is essential to critically examine the limitations and critiques articulated by researchers such as Godwin (2020). The contention lies in the extent to which FIDIC contracts can effectively address the complexities and nuances specific to the Kuwait construction sector. The risk of oversimplification arises when applying standardised contracts to unique and multifaceted projects, potentially leading to disputes and inefficiencies. To overcome the challenges associated with standardised contracts, Baker et al. (2018) discuss the necessity of customising FIDIC contracts for Kuwait's context. While the foundation provided by FIDIC contracts is valuable, some clauses and provisions may require adjustments to align with Kuwait's distinct legal and cultural landscape. This adaptability and customisation are fundamental to ensuring that contracts effectively cater to the needs of specific projects.

The systems reviewed include Public Tenders Law No. 49 of 2016 and the Central Agency for Aublic Tenders (CAPT). The various types of contract forms include NEC, JCT, ICE and FIDIC. Examining these systems improves understanding of the status quo and issues in the contract selection process in Kuwait, as well as gaps and improvement opportunities. The strategies that parties deploy to enhance contract selection process in Kuwait comprise increasing the flexibility and adaptability of standard contract forms to increase opportunities for negotiation and minimising the prescriptive requirements; providing contractors with adequate protection and remedies, such as dispute resolution; increasing

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transparency and accountability through compliance with public tender laws and the corresponding executive regulations; and promoting technology use to foster innovation and sustainability.

2.6.3 MCDM (Multi-Criteria Decision-Making Process)

MCDM is not only a tool for contract selection but also an invaluable resource for risk management in construction projects. Researchers have varying opinions on the effectiveness of MCDM in addressing risks in construction contract selection. Medineckiene et al. (2015) emphasise the significance of risk assessment and prioritisation within the MCDM process. They argue that MCDM aids in identifying risk sources and devising appropriate control strategies. The criteria for prioritising risks, including likelihood, severity, and detectability, are highlighted as essential components of the decision-making process. Massam (2018) perspective underscores MCDM's practical utility in managing risks effectively. However, Bac et al. (2015) offer a more balanced perspective, noting that MCDM's effectiveness in risk prioritisation depends on the project's specific needs. While MCDM provides a structured approach to risk assessment, Bac suggests that its success may vary depending on the availability of data and the project's complexity.

The MCDM process encompasses six fundamental steps, each contributing to a structured decision-making framework:

- 1. **Problem Recognition**: Recognising the problem is the initial step in the MCDM process. In the context of construction contract selection, this phase involves identifying the need for a comprehensive evaluation of available options.
- Understanding Requirements: Understanding the requirements entails a thorough examination of project goals, objectives, and constraints. Researchers such as Bac et al. (2021) emphasise the importance of a clear understanding of the problem's complexity.
- 3. **Goal Development**: The development of clear and specific goals is crucial. These goals serve as the basis for evaluating alternative construction contracts. It is essential to align these goals with the project's overall objectives.
- Option Generation: In this step, various contract options are outlined. The goal is to provide a comprehensive view of available alternatives, considering different contract types and their implications.



- 5. Criteria Establishment: Establishing evaluation criteria is essential for success. Criteria should be well-defined, reflecting project priorities and key performance indicators (Massam, 2018). This step is critical to ensuring that all relevant aspects are considered in the decision-making process.
- Decision-Making Technique Selection: Choosing the appropriate decision-making technique is pivotal. The selection depends on the specific context, project requirements, and the preferences of decision-makers. It can be a challenging aspect of MCDM, as highlighted by Medineckiene et al. (2015).

MCDM offers a diverse range of techniques to cater to the unique demands of construction contract selection. These techniques can be categorised based on factors such as compensation, continuity, and the decision-making entity. Some key considerations include:

- Compensation: MCDM techniques may or may not allow compensation among criteria. Compensatory approaches permit trade-offs between criteria, whereas noncompensatory approaches require that an alternative excel in all criteria to be selected.
- **Continuous or Discrete**: MCDM techniques may involve continuous (numerical) or discrete (categorical) data, depending on the nature of the criteria and alternatives.
- Group-based or Individual-based: Decision-making in MCDM can be group-based, where multiple stakeholders collectively make decisions, or individual-based, where a single decision-maker is involved (Massam, 2018).

Massam (2018) stresses the importance of considering the project's unique conditions and requirements. They argue that MCDM's adaptability is its strength, allowing for context-specific approaches that account for the project's intricacies. This perspective aligns with the idea that MCDM should be made in tandem with the particular needs of each construction project. On the other hand, Medineckiene et al. (2015) acknowledge the importance of context but suggest that the choice of MCDM technique should be based on broader factors, such as the nature of the criteria and the decision-makers involved. This perspective leans towards a more standardised approach to MCDM, emphasising the general applicability of certain techniques.



TOPSIS Technique

Mustafa & Al-Bahar (2021) have advocated for Technique for Order Preference by Similarity (TOPSIS) as an alternative MCDM method. TOPSIS finds the contract form closest to the ideal solution based on criteria, considering both advantages and disadvantages. However, Myeong et al. (2018) suggest that TOPSIS may require a significant amount of data, which can be a challenge in the Kuwaiti construction context.

ELECTRE (Elimination and Choice Expressing Reality)

ELECTRE, a method less commonly discussed but still relevant in MCDM, was explored by Tan et al. (2021). This approach focuses on outranking relationships among criteria. However, its complexity and sensitivity to parameter settings may pose challenges in practical applications.

AHP (Analytical Hierarchy Process)

Saaty developed AHP, which is predicated on a structured methodology that allows for the systematic evaluation of criteria and alternatives in a hierarchical fashion. Researchers have offered varying perspectives on the efficacy of AHP in construction contract selection, particularly in large-scale projects. Saaty's foundational work in the development of AHP remains seminal. He asserts that AHP's hierarchical structure enables decision-makers to condense complex problems into manageable components, facilitating transparent decisionmaking (Tung, 1998). His perspective underscores the method's ability to handle intricate decision processes. Darko et al. (2019) extended AHP's capabilities by introducing a weighted-sum approach. They argue that AHP's versatility allows it to accommodate both quantitative and qualitative data, making it suitable for a wide range of decision contexts. This perspective highlights AHP's adaptability to diverse project requirements. In the context of the construction industry, researchers like Kuzman et al. (2017) have emphasised AHP's utility in selecting appropriate contract forms. They contend that AHP's ability to quantify decision-makers preferences and priorities enhances the objectivity and consistency of contract selection. This perspective showcases AHP's practical application in a specific domain. Aminbakhksh et al. (2018) have compared AHP to traditional methods and concluded that AHP offers more robust and transparent results.

While AHP is widely accepted as a robust decision-making tool, its successful implementation in the construction sector is not without challenges. Kuzman et al. (2017), acknowledge



potential challenges in the application of AHP, such as the need for consistent data and the subjectivity inherent in pairwise comparisons. They argue that careful consideration is required to mitigate these challenges effectively. This perspective underscores the importance of data quality and decision-maker expertise in AHP. Several researchers, including Wo et al. (2018), express concerns about the subjectivity inherent in AHP. The process involves assigning subjective judgements and pairwise comparisons, which can introduce bias into the decision. Additionally, Saaty's AHP provides a structured approach to decision-making, but its application demands a substantial investment of time and resources in collecting and analysing data. The literature acknowledges this drawback, as it can sometimes deter practitioners from adopting AHP, especially in fast-paced construction environments.

A significant portion of the research in the Kuwait construction sector has focused on AHP. Nguyen (2020) highlights the adaptability of AHP for evaluating different criteria, such as cost, quality, and risk, to choose the most suitable contract form. On the other hand, Wong & Li (2018) argue that AHP, while popular, may oversimplify the decision-making process by not adequately considering interdependencies among criteria. Furthermore, the effectiveness of AHP heavily relies on the quality and relevance of the criteria and subcriteria chosen for analysis. The literature is somewhat limited in discussing the potential bias in criteria selection, as it can significantly influence the final contract form recommendation. Therefore, it is crucial for researchers and practitioners to critically assess the chosen criteria and ensure they accurately reflect the project's unique characteristics. (Kuzman et al., 2017) The table below showcases the advantages of Multi-Criteria Decision-Making (MCDM) and Analytic Hierarchy Process (AHP) in the construction industry.



Researcher	Type of Project	Research Type	Advantage of AHP	Advantage of MCDM	Contribution
Wagner & de Vries (2019) Kumar (2014)	Commercial Building	Case Study	Structured Decision-Making Process	Enhanced decision making in the construction industry	 AHP provides a structured approach for decision- making in contract form selection. AHP simplifies complex decisions but may not consider interdependencies effectively.
Bhangale et al. (2024) Broniewicz & Ogrodnik (2020)	Infrastructure	Literature review	Comprehensive Evaluation of Criteria	Adaptable framework for risk allocation	AHP allows for the evaluation of multiple criteria, including cost, quality, and risk. AHP's comprehensive approach considers various criteria, enhancing decision quality.
Touti & Chobar (2020) Raut & Mahajan (2015)	Residential	Empirical research	Flexibility in Criteria Selection	Promote transparency and fairness in procurement	 AHP permits flexibility in the selection of criteria, accommodating project-specific needs. AHP's flexibility allows for customisation but may result in subjectivity.
Aksoy & Gursoy (2020)	Infrastructure	Case Study	Handling Complex Interdependencies	Alignment with Kuwait's legal and cultural context	AHP may not effectively handle interdependencies among criteria, potentially oversimplifying. AHP may not fully address the complexities of decision-making in the Kuwait construction sector, requiring further refinement.
Zolfani et al. (2018)	Infrastructure	Survey	Data-Intensive Decision Support	Sustainable criteria in decision-making	TOPSIS provides data-intensive decision support for selecting contract forms. The data-intensive nature of TOPSIS poses challenges in data collection



Tamosaitiene et al. (2021) Maghsoodi & Khalizadd (2018); Torfi & Rashid. (2021)	Commercial	Comparative study	Balanced Assessment of Options	Systematic approach to criteria evaluation	TOPSIS balances the assessment of contract forms by considering both advantages and disadvantages. TOPSIS offers a more balanced evaluation of contract forms compared to AHP.
lqbal et al. (2021) Liu & Wei	Infrastructure	Survey	consideration of Nuanced Decision Dynamics	Consider inter- dependencies among criteria	ELECTRE considers outranking relationships among criteria, capturing nuanced decision dynamics. ELECTRE's complexity and sensitivity to
(2018)					parameter settings may pose challenges.


2.7 Gaps in the current understating of the contract forms selection process.

The literature available for this topic has made it evident that not a single type of contract can be perfect, as there are different requirements of each party involved in the contract. Considering that the success of any construction project relies mainly on factors such as management skills, detailed work plans, experience, time-sensitive deliverables, and many others, it is essential to define how responsibility would be allocated for any project. This demonstrates the importance of choosing the right type of contract, as this could determine the nature of the relationship among contracting parties (Hou and Neely, 2018). Moreover, the contract selection needs to be especially clear about how the needs of the owner and the contractor will be met (Fayezi, Zutshi and O'Loughlin, 2017). Many contractors have a different perspective than the owners, as the former think that profits should be maximised, which can result in cutting corners with materials or other work. On the other hand, owners think that the costs should be low, the original schedule should be followed as agreed upon initially, and the end result would be of high quality. The literature review has highlighted the various types of contracts and the current system that is being used in Kuwait for the selection of contracts. One of the most significant literature gaps is that there is a lack of understanding about contract selection and its various requirements for Kuwait specifically. Moreover, knowledge about contractual issues in the construction industry of Kuwait are somewhat limited, as large-scale construction has been largely overlooked in the literature (Biygautani, 2017). This aspect is especially important, as large-scale projects are often the most problematic ones. Contract selection for such projects can also be of great benefit to the construction industry of Kuwait, as each party would be able to understand the other's requirements and try to ensure that suitable contracts are being selected (Grandia and Meehan, 2017). Additionally, most research studies have focused on the lack of technology or appropriate management practices, while the human and social factors that enable those technologies to be implemented are often neglected. Soft management aspects such as trust are also a vital part of contracts, and it would be useful to explore this perspective further for its role in project management. Furthermore, there are many options in terms of the factors that are essential for selecting a contractor; however, most of this information is not specific to the context of Kuwait.





CHAPTER THREE Research Methodology



3 Research Methodology:

The researcher is required to choose a suitable approach that would enable them to address the research questions effectively. The methodology will influence the quality and accuracy of the data collected during the study. There are various definitions of the research methodology section in this research. One of them defines research methodology as a systematic approach used to investigate the research objectives (Creswell, 2009). Most of the definitions are similar to this one by Creswell. For example, another definition describes it as the specific approach adopted by the researcher to facilitate the research and the achievement of the research objectives (Silverman, 2010).

The purpose of this thesis's research methodology chapter is to describe the research approach used in the study to address the research questions and achieve the research objectives. This chapter includes documentation of possible options available for this research study. It also involves an analysis of the options that were considered for the research and that would produce more efficient results. The research design and the various processes selected during the research process of this research are also explained.

3.1 Research Models

Before officially embarking on the research of a given topic, a researcher should carefully come up with a critical outline of the stages to be involved in the research methodology as well as the activities to be contained within the research design. The information on the stages and activities to be involved in this chapter comes from secondary sources (published literature). Unfortunately, secondary sources can be unreliable due to inaccuracies and contradictions. It is common for scholars to have different ideologies on the steps to be included in the research methodology as well as the names used to refer to these steps. One of the most adapted sets of stages for a research methodology is referred to as Crotty's research model (Crotty, 1998). This model consists of four distinct stages, namely epistemology, theoretical perspective, methodology, and methods, as illustrated in the diagram below.



Figure 3.1 Crotty's Research Model (Crotty, 1998)

In the diagram above, it is illustrated that the research model consists of four parts that sequentially follow each other, and all come after the researcher has succinctly and comprehensively defined the objectives of the research. Epistemology is the phase where the researcher identifies his or her sources of information as well as methods of data collection and carefully analyses their usefulness, merits and demerits. It is here that the researcher establishes the relevance of all the possible sources and methods and decides which ones to use or adapt. The theoretical perspective phase involves the researcher coming up with assumptions and hypotheses bout the research question as well as the expected results. Methodology refers to a system of methods to be used in the research, and methods refer to the specific procedures to be used.

Another research model is the nested or hierarchical model (Kroll, 2010). This model only has three distinct elements, namely the research techniques, the research approach, and the research philosophy. Research philosophy explains the beliefs adopted in how relevant data should be collected, interpreted and used. In Crotty's model, this stage was referred to as epistemology. Research approach as well as the plans and procedures to be adopted in the study. It is best illustrated using case studies. Finally, research techniques are the methods and tools to be employed to ensure the success of the approaches selected. This model is illustrated below.



Figure 3.2 Nested Research Model (Kroll, 2010)

This approach was later on expounded on by other philosophers into a more detailed and sophisticated model (Saunders, Lewis & Thornhill, 2019). This new model consists of approaches, philosophies, strategies, procedures, techniques and time horizons. The model also includes an outline of the choices involved within each of these elements, as illustrated below.



Figure 3.3 Research "Onion" methods for business students (Saunders, Lewis & Thornhill, 2019)

After a critical analysis of the available model, this research was based on the onion model since it is more elaborate and detailed and, thus, would ensure accurate and successful results. It is also a very systematic approach with very clear guidelines. This ensures the simplicity of the model and a greater understanding of the stages to be undertaken.



3.2 Description of the Research Methodology

Research methodology can be viewed as the theory of the undertaken research (Kothari, 2004). Therefore, it can be deduced that a well-defined methodology allows a researcher to create logical sequences that connect the empirical data to the research question and, as a result, enable the researcher to reach a thorough conclusion. Research methodology, as stated earlier, is divided into sequential and distinct stages. Each phase produces a conclusion that acts as the data being fed into the following phase. This sequential process is repeated until all the objectives of this research are met.

There are six distinct phases according to the "onion" model (Melnikovas, 2018). The phases support clearly understanding the adopted research model used for a given research paper. These phases include research approach, research philosophy, research strategy, time horizons, and data collection methods (Kothari, 2004).

3.2.1 Research Philosophy

Research philosophy is the life perspective that guides the entire research process, which the researcher adopts. It represents the fundamental views and conventions about the nature of knowledge, reality, and the way researchers should conduct their investigations (Mkansi and Acheampong, 2012). It determines the researcher's approach to the study, influences the choice of research procedures, and impacts the way findings are interpreted. The choice of a research philosophy is a critical decision, as it shapes the overall research approach and methodology. This phase can be defined as a term that encompasses the development of knowledge and its specific characteristics. Saunders states that research philosophy consists of four different perspectives, as outlined below:

Pragmatism is a research philosophy that emphasises the practicality of research methods. It encourages researchers to select methods and approaches that are most suitable for addressing a specific research question or problem. This perspective involves embracing the ideologies of all the existing philosophies without settling for any of them. It analyses the practicability of a philosophy rather than its theoretical back-up. Pragmatist researchers choose methods that best fit the research objectives and adapt their approach as the research evolves. They may deploy a combination of quantitative and qualitative methods to obtain a comprehensive understanding of the research topic (Chia, 2002). The focus is on solving practical problems or addressing research questions, rather than adhering to a



specific philosophy. Pragmatism is valued for its flexibility and adaptability in addressing realworld issues. However, it may face criticism for its potential lack of a coherent, overarching framework.

Positivism is based on the impression that there is an impartial reality that can be studied scientifically. It assumes that the world is orderly and that it is possible to discover objective truths through empirical observation. This is an approach that recognises and accepts only that which can be mathematically and logically proven or that which can be verified scientifically. (Crossan, 2003). Researchers aim for objectivity, seeking to minimise bias and personal influence on the research process. Positivist research often relies on quantitative data and statistical analysis. Positivist research tends to be deductive, where researchers begin with a theory or hypothesis and seek to confirm or refute it through systematic data collection (Crossan, 2003). Data collection methods typically involve surveys, experiments, and structured observations. The advantages of positivism include its ability to generate precise, replicable results and establish objective knowledge. However, critics argue that it can oversimplify complex social phenomena and ignore subjective experiences.

This perspective aims to study and understand the subjective reality of their samples so as to make sense of the motives, intentions and actions of their study subjects. It assumes that individuals develop their personal reality, and that this reality is shaped by their understandings and involvements. Researchers recognise the influence of their own subjectivity and the subjectivity of participants in shaping the research process. Interpretive research often uses qualitative data, such as interviews, focus groups, and participant observations. The goal is to understand the meaning and context of human experiences. Interpretive research is typically inductive, starting with the collection of qualitative data and then seeking to derive patterns and themes from this data (Walsham, 2006). Researchers often use methods like narrative analysis and grounded theory to make sense of the rich, context-specific data. The Advantages of interpretivism include its ability to capture the richness of human experiences and understand complex social processes. However, it can be criticised for lacking objectivity and generalisability.

This perspective is based on a strong belief in the existence of reality and is not interfered with by human beliefs, thoughts, or imaginations (Hunt, 2018). Constructivism takes the view that reality is socially constructed, and that knowledge is a product of human interaction. It



places a strong emphasis on the role of language and social context in shaping individual and collective understanding (Adom, Yeboah and Ankra, 2016). Researchers consider the social world from multiple perspectives, acknowledging that different individuals may interpret it differently. Data collection methods may include in-depth interviews, content analysis, and ethnography. Realism's strength lies in its recognition of both objective and subjective elements of reality. However, it can be challenging to strike a balance between these two perspectives.

The aim of this research is to determine the methods applied in Kuwait's construction industry to select appropriate standard contract forms. The research intends to satisfy that aim by developing a framework to assist in the selection of construction contracts in Kuwait's construction industry. In this study, the pragmatism research philosophy will be used. This is a research paradigm that is based on the proposition that methodological and/or philosophical approaches that are most effective in providing answers for the specific research problem under investigation should be utilised (Kaushik & Walsh, 2019). This means that this philosophy is entirely focused on resolving the problem under investigation and thus consists of the research methods that are the most suited to gaining the answers in the most effective and efficient manner. This philosophy allows the researcher to focus on individual decision-makers in real-world circumstances. Therefore, the researcher needs to identify or determine the problem to be studied in the broadest possible context. This can then result in an inquiry or seeking knowledge and understanding specific to the topic or problem so that it can be understood in a better manner (Salkind, 2010).

The purpose of the philosophy is to practically investigate and understand the topic, and it strongly rejects any ideas that may be unpractical. This study is focused on acquiring an understanding of the current contract selection system in Kuwait's Construction Industry in order to gain evidence regarding its shortcomings. Since this research requires a practical understanding of this aspect in order to develop appropriate recommendations for a better system of contract form selection, the pragmatist philosophy will be the most appropriate to achieve its objectives and aim. By choosing pragmatism as the guiding research philosophy, this study prioritises practical investigation and understanding of the topic. It casts aside ideas that may be impractical in favour of methodologies and approaches that yield actionable insights, making it highly appropriate for the objectives and aims of study.



3.2.2 Research Approach

It is essential for research to be based on existing theories to ensure its success (Bryman 2012). The sole purpose of identifying a concrete research approach prior to conducting the research on a given question is to ensure a complete understanding of the interactions nature between the social elements being studied and the chosen related theories (Bell et al, 2019). There are two types of research approaches, namely deductive and inductive approaches. These approaches are as defined below:

- a) Deductive Research Approach: Here, the scholars come up with a series of hypotheses and then bases the research design on these hypotheses. This approach involves the researcher beginning with a broad area before narrowing down the study to a more specific area and is also referred to as the top-down approach.
- b) Inductive Research Approach: In this approach, the scholer's chooses a given theory to adopt based on the results of the analysed data. It originates from a specific set of observations in the formulation of a theory and is also referred to as the "bottomup" approach (Saunders et al, 2019).



Deductive and Inductive Approaches

Figure 3.4 An elaborate explanation of inductive and deductive research approaches. (Saunders et al, 2019) Considering these two approaches, it is evident that this research leans towards the inductive approach. There is very limited and shallow information on the standard forms of contract used in Kuwait's Construction Industry.

The study will adopt an inductive design approach. Induction refers to the type of reasoning that is utilised for gaining knowledge, understanding, and establishing a relationship for



theory with observations (Bryman and Bell, 2007). The purpose of this design is to formulate generalised statements on the basis of the efforts or observations made by the researcher so that a theory could be developed from the empirical data (Given, 2008). Thus, this methodology attempts to seek out patterns from the observations as well as develop explanations or theories for the observed patterns via a set of hypotheses. Regularities, resemblances, and patterns within the premises or experience are observed by the researcher for the development of the conclusions (Saunders et al., 2007). This methodology was deemed the most appropriate for the study, as evidence is required for comprehending which aspects of contract form selection in Kuwait's construction industry are currently causing a problem or lacking in any way. Once the research has acquired sufficient data, the search for regularities and patterns within it will enable relevant conclusions to be drawn and useful recommendations to be provided.

3.2.3 Research Strategy

This refers to the researcher's general plan on how he will go about trying to fully and successfully respond to the research question as well as fulfil all the research objectives (Saunders, Lewis & Thornhill, 2019). Some philosophers agree that research strategy refers to the academic approach employed by researchers during their attempt to answer the research question, with the aim of structuring their research in a social context. Researchers can either choose a qualitative or quantitative research strategy.

- a) Quantitative research strategy: Here, data is collected in the form of numbers that are interpreted through calculations based on formulas obtained from the different available literature.
- b) Qualitative research strategy: The data collected with this strategy is in the form of conceptions, perspectives, and opinions.

Each approach had strengths and weaknesses. For instance, if a researcher chooses to go with the quantitative strategy, they forego vital information that lies in people's opinions and perspectives. Similarly, a researcher who chooses to only follow the qualitative strategy foregoes the answers that could be lying in the numbers. It is, thus, effective to encompass both strategies in one's attempt to fully answer a research question, especially in a social context. The combination of both methods also assists in eliminating any bias that may arise from the individual strategies (Creswell, 2019). There are quite several strategies to choose



from when conducting research. These include ethnographical studies, case studies, surveys, action research, experiments, and grounded theory (Creswell, 2019). Researchers might find some strategies more appropriate to their studies compared to others. It is key to consider the research philosophy and approach when deciding on the strategy to pick. Below is an elaboration of the strategies that fall under qualitative, quantitative, and a combination of both strategies.



Figure 3.5 Research Strategies (Creswell, 2019)

A researcher can also choose to use a combination of two or more independent strategies to comprehensively answer the research questions without any evidence of bias. According to (Creswell, 2019), some of the most common strategies are discussed below:

- a) Surveys: This involves strategic and structured data collection using a given sample size or the whole population, where applicable.
- b) Case studies: This involves investigating a given social phenomenon in a real-life context using various sources of evidence.
- c) Experiments: This involves the measurement of a given minor number of variables while controlling other variables. It is most common in scientific research.
- d) Grounded theory: Here a series of observations and interviews, involving an inductive approach, are conducted, leading to the collection of data. The collected data is then used to develop a viable theory.
- e) Ethnographical studies: This approach emphasises studying and understanding the social world through conducting of first-hand field study.



Since this is more social research than scientific research, an experimental strategy is not viable. A case study approach was not considered viable, as it would not be effective in revealing lessons on the approaches used to select the standard contract forms across the construction industry in Kuwait. We can, therefore, not rely on conducting case studies to come up with all the necessary data.

Ethnographical studies, as well as action research, were also not judged as viable options for this research. Action research would be more viable in a situation where the study focused on the management of change and was made up of different processes used to try to change something. Ethnographical studies would also have been viable if this study was aimed at finding the meaning of the social world. This is not what this research paper aims at. The researcher, therefore, needed to choose a strategy that would ensure the primary study of the stakeholders involved in the decision-making process when it comes to choosing standard contract forms to be used in the construction industry of Kuwait.

Considering all the available strategies, the researcher saw it best to resort to the use of surveys and interviews to answer the research questions. This research, as outlined before, is aimed at establishing the methods used in the selection of standard contract forms in the Kuwait construction industry. The best way to achieve the required information was judged to be through surveys and interviews involving stakeholders and personnel in the Kuwait construction industry. That would enable first-hand information on how they come up with the standard forms to use to be gathered by the research. With surveys and interviews, one can opt to use a number of techniques, such as face-to-face interviews, phone interviews, or questionnaires. In this study, the researcher saw it best to employ questionnaires and interviews while conducting the survey.

3.2.4 Research Choices

A researcher can choose either a qualitative or quantitative approach when striving to answer a research question. In some cases, a researcher can choose to use a mixed approach to ensure comprehensive results. The mixed approach involves the use of both qualitative and quantitative approaches concurrently. It is also generally defined as the research approach whereby the investigator collects data for analysis, integrates his or her findings, and comes to substantial conclusions using both qualitative and quantitative methods and techniques in a single study or research (Creswell, 2018).



3.2.5 Research Design

The research design refers to the detailed framework for conducting the research. The research or data collection for this research will be conducted using structured and semi-structured questionnaires. Questionnaires can be classified as structured, semi-structured, or unstructured. The mixture of structured and semi-structured approaches in the questionnaires as well as during the interviews. Below is a brief description of these approaches.



Figure 3.6 Difference between structured, unstructured, and semi-structured interviews. (Creswell, 2018) The advantage of using both structured and semi-structured questionnaires is that the respondents have a chance to freely express themselves while answering the questions, while at the same time, the researcher controls the answers to be chosen by the respondents, making the analysis and comparison process easier.

Pilot Study

A pilot study, also known as a pre-test study, is a preliminary investigation conducted before the main research to evaluate the research design, data collection methods, and other research-related procedures. It serves as an invaluable tool for researchers, helping them avoid costly mistakes and inefficiencies in the primary study (Pandey & Pandey, 2021). The primary objectives of a pilot study are to test and refine the research design, identify potential issues, and validate the research methods and instruments.

The pilot study allows researchers to assess the clarity and feasibility of the research objectives. It helps in ensuring that the main study's goals are well-defined and attainable. Additionally, the pilot study allows for the refinement and validation of research instruments



such as questionnaires, interview protocols, or observation checklists. This ensures that the instruments are valid, reliable, and capable of measuring the intended variables accurately. Any necessary modifications can be made before data collection in the primary study. Moreover, it helps in determining the most efficient and effective data collection procedures, including the choice of data sources, the sampling strategy, and data management (Newhart, 2021).

Researchers can apply the chosen statistical or analytical methods to a smaller dataset in the pilot study to validate their suitability for the main research. It helps to determine the appropriate sample size for the main study. The pilot study can provide insights into the variability of data, helping in the calculation of the required sample size for achieving statistical significance. A pilot study also helps researchers identify any potential issues, logistical challenges, or obstacles that may arise during the main study (McNeill & Chapman, 2015). This proactive approach aids in mitigation strategies. Lastly, a pilot study helps in fine-tuning the research procedures. This includes testing the sequence of activities, timing, and logistics to identify any operational challenges or bottlenecks that may arise during the main study. The pilot study was meticulously designed to resemble key aspects of the main research, including the population of interest, research questions, and variables. This approach was intended to create a controlled and scaled-down environment for the pre-assessment of our research process. Meticulous attention was paid to the fundamental aspects of the pilot study's design to ensure its relevance and reliability.

The design of my pilot study was meticulously crafted to mirror key aspects of the main research project. This encompassed the population of interest, research questions, and variables, albeit on a smaller scale. My aim was to create a pilot study that was essentially a miniature version of the main research, thus ensuring that any issues or limitations could be identified and rectified before they impacted the larger-scale investigation. To conduct the pilot study, the author opted for a purposive sampling method, selecting a sample size constituting approximately 10% of the anticipated sample size for the main study. This approach struck a balance between providing me with enough data for meaningful insights while remaining manageable in terms of available resources and time constraints. During the data collection phase of the pilot study, the author meticulously followed various data collection techniques, including interviews and surveys. This phase was instrumental in



identifying any potential issues in administering the chosen instruments. Parameters such as the response rate, the time required for data collection, and the clarity of instructions provided to participants were rigorously monitored. Preliminary data analysis was conducted to assess the appropriateness of the chosen statistical techniques and software intended for use in the main study. This served as a vital step in the pilot study, as it enabled me to identify any anomalies or peculiarities in the data that could potentially affect the research outcomes.

One of the key objectives of this phase was to gauge the efficiency of data collection methods. This involved monitoring response rates, which provided valuable insights into the willingness of participants to engage in the research. The time required for data collection was also closely observed, helping me estimate the resource allocation needed for the main research project accurately. Moreover, the author paid meticulous attention to the clarity of the instructions provided to participants. Clear and comprehensible instructions are essential for obtaining accurate and reliable data. Any ambiguities or confusion reported by participants were noted, allowing for the refinement of instructions and questionnaires to enhance clarity. This phase of the pilot study also presented the opportunity to assess the practical challenges that may arise during data collection.

The findings of the pilot study uncovered several valuable insights that are set to inform my main research endeavour. The clarity and reliability of my data collection instruments were confirmed, with only minor issues reported by a few participants. The sampling procedures were found to be efficient, yielding a diverse and representative sample. The selected statistical methods and software tools were appropriate and amenable to the data type.

Considering the insights derived from the pilot study, a series of modifications and refinements were instituted. Minor adjustments were made to the questionnaire to enhance clarity and comprehensibility. The data collection protocol underwent modifications to bolster efficiency without compromising the quality of the data. Minor changes were made to the wording and structure of the survey questions to enhance clarity, making it even easier for participants to comprehend and respond to them. The data collection protocol was adjusted to optimise efficiency without compromising data quality. The author aimed to strike a balance between expeditious data collection and maintaining the integrity of the research.



Questionnaires and Interviews

The research strategy is defined as the method that provides overall research direction and comprises the process with the help of which a study can be conducted (Bryman and Bell, 2007). The strategy guides the researcher in the planning, execution, as well as monitoring of the research. It also allows for the selection of the research methods which enable the researcher to understand how the data would be collected and analysed. Essentially, research strategy consists of the systematic process of conducting research in a manner that would allow for the inquiry into the issue. In this study, both qualitative and quantitative research strategies will be adopted.

Quantitative research strategy focuses on the collection of data about a phenomenon or research problem which is numerical in nature, along with execution of computational, mathematical, or statistical techniques. This involves statistical breakdown comprising of various strategies such as inferential statistical, mathematical exposition, quasiexperimental and experimental design randomisation, questionnaires with prearranged answers of restricted variety, and structured protocols (Collis and Hussey, 2003). The qualitative strategy is focused on the exploration of insights and meanings within the given situation. This strategy comprises techniques for both data collection as well as analysis that utilise purposive sampling along with open-ended, semi-structured interviews. The goal of utilisation of this strategy is to allow the researcher to formulate a high level of detail from the participants' actual experiences. Therefore, this involves a naturalistic and interpretive approach towards the subject matter that comprises non-numerical data in order to interpret the meaning from the data, which can aid in the understanding of social life via the study of places or populations that have been targeted (Flick, 2014). For this study, the goal was to make recommendations for improvement within the system of contract selection within the construction industry of Kuwait after carefully analysing its current weaknesses and strengths, which is why utilisation of both research strategies will be appropriate.

Surveys are very useful when gathering statistically viable data. They allow one to obtain information from large samples of the target population, if not the whole population, within a short period of time. Surveying comprises diverse arrangements and structures of questionnaires and interviews. This is a mixed-methods study with the aim of obtaining qualitative data. Hence, questionnaires and interviews are consequently applied to obtain

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the essential information. By standard definition, questionnaires are survey instruments consisting of a series of related and well-structured questionnaires that have the advantage of providing both specific data and general information.

Questionnaires have several advantages. Some of these advantages include the fact that they are economical and time-saving, especially where there are a lot of respondents scattered over a large geographical area. Questionnaires enable random access to respondents, making them an economical and practical method of data collection. It also enables easy comparison of the responses obtained. Mailed questionnaires also enable the respect of the respondents' privacy and anonymity in cases where respondents prefer their identity to be kept private. This, in turn, promotes the respondents' confidence and, hence, more accurate responses. (Tang et al. 2007). Due to the situation at the time of conducting the survey, with the ongoing COVID pandemic, the questionnaires were emailed to the targeted categories to limit physical contact and obtain the required information in a safe.

This study will also involve the use of interviews to obtain information. These are basically structured conversations in which one participant asks questions and the other answers with free will (Cresswell and Clark, 2011). Interviews may be structured, semi-structured, or unstructured, depending on the relationship between the interviewer and the interviewee as well as the interviewer's proficiency with the topic in question. Unstructured interviews work best in situations where the interviewer has a close relationship with the target sample and can obtain the required information from casual conversations. Structured interviews are more professional and efficient in situations where the interviewer has no close relationship with the target sample (Cresswell, 2009). Below is a clear description of the types of interviews.

Structured interviews	Semi-structured interviews	Unstructured interviews	
Most formally structured	More or less structured	Completely unstructured	
No deviation from the question order	Questions may be recorded during the interview	No set order to any question	
The wording of each question is exactly as written	Wording or questions flexible	No set wording to any questions	
No clarifications or answering of questions about interview	The interviewer may answer questions and make clarifications	The interviewer may answer questions and make clarifications	
No additional questions may be added	The interviewer may add or delete probes to interview subsequent subjects	The interviewer may add or delete questions between interviews	

	Table 3.1	Types	of Interviews	(Creswell	, 2009
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Interviews are very essential when conducting social studies. Interviews have many advantages, including being time-efficient and enabling the collection of well-elaborated responses. They, on the other hand, have the disadvantage of collecting inadequate information in cases where the respondents are not comfortable enough to give out some information. The one-on-one conversation, however, allows the interviewer to eliminate these fears and create an environment where the participants feel free to give out all the required information (Creswell, 2009).

The target audience for these interviews was professionals working in the Kuwait construction industry, like consultants, employers, contractors, and experts and arbitrators.

3.2.6 Time horizons

There are two distinct time horizons that could be adopted during research, depending on the research questions and how the researcher intends to answer them. One of the time horizons is the longitudinal study. This is the study of a phenomenon over an elongated period of time to assess its dynamic progression. The other time horizon is the crosssectional study. Here, a phenomenon is studied at a particular, static, point in time to determine its behaviour or nature at the specific time of the study (Saunders, 2019).

Cross-sectional	Longitudinal
One point in time	Several points in time
Different samples	Same sample
Snapshot of a given point in time, change at a societal level	Change at the individual level
Eg, British Social Attitudes Survey, Labour Force Survey	Eg, British Birth Cohort Studies, Understanding Society

Figure 3.7 Difference between cross-sectional and longitudinal time horizons (Saunders, 2019).

This study is interested in determining the methods of selecting standard forms currently used in the Kuwait construction industry. For that matter, the researcher is only interested in understanding the methods rather than their dynamics. Therefore, the time horizon of choice in this study is cross-sectional research.

3.3 Data Collection

Data collection refers to the process of obtaining as well as measuring the information for the variables that are of interest to the researcher based on the topic in a systematic and established manner, which allows them to provide answers to the research question and



evaluate the outcomes. The aim of the collection of data is to gain quality evidence that can translate to analysis that is reliable and enables the building of credible and convincing answers to the research question (Jackson, 2014). For this research study, both primary and secondary sources will be used for the collection of data.

Secondary data refers to information that was acquired from someone other than the researcher for different purposes. This kind of data is acquired from already published sources. Since this study required an extensive study of different aspects of contract form selection in the construction industry in Kuwait, such as commonly seen issues, types of contracts, the existing contract selection system, and others within the literature review, it was necessary to include data from secondary sources. Thus, the secondary data for this study was collected from various sources, including books, internet articles, peer-reviewed journals, databases, and others.

This kind of data is usually collected first-hand by the researcher precisely to comprehend, examine, and respond to the research questions. This data is both raw and unprocessed, as well as being objective, authentic, and reliable (Silverman, 2013). Such information is necessary to include in the research as it can contain more information about the phenomenon or topic under investigation. This study includes two sources of primary data, which include a survey questionnaire and semi-structured interviews.

3.3.1 Research Population & Sample

The researchers will randomly select consultants, contractors, and employers from Kuwaiti construction projects as their sample. They will include 50 participants from each group, representing different sizes of firms and projects in the country. They will also interview 8 to 12 representatives from various sectors that have experience with the contract selection process and construction projects in Kuwait, such as the Ministry of Public Works, the Public Authority for Housing and Welfare, the Public Authority for Industry, and the Kuwait Oil Company. The interview will explore the existing system used by each sector separately. While the research will include an interview to investigate separately the existing system used for each sector familiar with the contract selection process in Kuwait and have a number of construction projects in Kuwait such as: Ministry of Public works, Public Authority for Hosing and welfare, Public Authority for industry, Kuwait Oil Company and their target population will be (N= 2 - 3 for each) and totally (N= 8 - 12).



3.3.2 Survey Questionnaire

A survey refers to the instruments used for the collection of quantitative data. The responses acquired through surveys can be coded numerically, which allows for meaningful summarisation of the data, analysis, reporting, interpretations, and an effective display of the findings of the research (Bryman and Bell, 2007). A survey questionnaire refers to the research instrument comprising of set of questions, otherwise known as items, with the purpose being collecting data from the participants. This comprises of a particular type of interview whereby conversations are overseen by order of questions and their wording. The questionnaires are generally administered in a manner which would be the same for all of the participants (Bryman and Bell, 2007).

There are various advantages and disadvantages to the questionnaire tool. In terms of disadvantages, this approach creates room for the respondents to respond dishonestly or skip some of the questions, which can make the questionnaire impossible to utilise for the research (Myers, 2009). There is also a lack of personalisation which can impact the quality of the answers being provided. The researcher has no way of knowing whether or not the respondents grasp all of the questions being asked, and this could affect their answers as well (Miller and Miller, 2010). Questionnaires may also contain some questions of an open-ended nature that the researcher has no way of quantifying (Collis and Hussey, 2003). These also lack in terms of conveying the feelings or emotional responses of the participants, which may be necessary for the evaluation of the topic. Respondents may also interpret the standard questions differently, which can yield varied answers that may not truly comprehend the topic at hand.

The advantages of this tool may outweigh its disadvantages since it is an inexpensive and very practical method of collecting quantitative data. The results can easily and quickly be acquired via different means, such as through the Internet, etc. Questionnaires can be administered to a large sample population or audience which means that the information would be more statistically meaningful. After the quantification of data acquired from questionnaires, it becomes easier to contrast and compare with another research. The visualisation and analysis of such information is also much easier. It also allows the respondents to maintain their anonymity, which may encourage them to provide honest answers while covering the topic in the broadest sense. A Survey questionnaire will be used,



as this will allow the researcher to acquire the quantifiable data from the respondents about the overall topic (Creswell, 2009). This would also yield meaningful statistical information from a large population sample, which is not possible with any other approach. The questions will not be open-ended and will follow a structured format to ensure that the questions are not misinterpreted, so that quantifying the data is easier. The questionnaire will be transcribed in both English and Arabic so that the sample population, which is local to Kuwait will be able to understand and comfortably provide their answers. This will be necessary since not all participants may have perfect comprehension of the English language, which would then prevent them from giving extensive and in-depth answers. Thus, this approach will be appropriate by providing strategies needed for formwork and assisting in selecting the best form of contract, term of payment, and project delivery system from a multiple of them. All of these types depend on different criteria like time, funding, size type, and sector. This will be performed using questionnaire given to major contractors, legal consultants, project management services providers and major design consultants. The author will run a questionnaire survey to review the strategies needed to develop contract selection in Kuwait's construction Industry.

3.3.3 Semi-Structured Interviews

This is a method in which the researcher asks questions to participants in person, and they can provide their honest opinions and feelings. With such interactions, the researcher is able to gather information from not only the verbal but also the non-verbal cues of the participants, which makes the data more accurate and reliable. The semi-structured interview format is one in which a formal interview is conducted where the researcher makes use of an interview guide with a set of established questions on a broad range of topics related to the phenomenon. However, the researcher may be able to deviate from the established list of queries based on the answers acquired from the participants (Crowther & Lancaster, 2012). There are several disadvantages of this tool. There is a potential for loss of data because of the infeasibility of conducting interviews face-to-face. Additionally, there may be some language barriers when interviewing people who speak a different language. If the understanding regarding the topic happens to be limited, then this tool can lead to the underrepresentation of the population which is being studied. There is also a chance that the participants may not provide honest and genuine answers if the questions have an



impact on their personal or professional lives. On the other hand, this tool can generate an in-depth understanding of the topic through a comprehensive conversation about the various aspects of the research phenomenon being studied. Scrutiny of conversations and responses can also result in multi-layered conclusions. The flexibility of asking to follow up questions based on the responses of participants has an added benefit of gaining deeper knowledge about the subject, which the researcher may not have thought of beforehand (Given, 2008). It could lead to new ideas being generated regarding the topic, which may have an impact on the findings.

This tool will be appropriate for this research as it would allow for a deeper comprehension of the topic, which may not have been covered in the surveys. The interviews would follow the questionnaire, which would provide the participants with an opportunity to elaborate upon the answers in a manner where their feelings are also being conveyed. The secondary stage will reflect on the extent to which contract selection modification by choosing a contract form, project delivery system, and term of payment depends on the nature and type of the project and how it will help in improving construction project performance in Kuwait through the reduction of the number of delays, variation orders, disputes and terminations, which can be a cause of the increased number of stumbling projects in Kuwait's construction industry. This will be performed using a questionnaire survey that will be addressed to major contractors, employers, major design consultants, project management service providers, Arbitrators and experts to evaluate the strategy suggested in the previous section regarding the extent to which the participants agree that the strategy will help in enhancing the Kuwaiti construction industry's performance.

3.4 Data Analysis

3.4.1 SPSS for Questionnaires

Statistical Package for the Social Sciences is a software for the processing as well as analysis of data acquired from survey questionnaires. This tool allows the researcher to acquire simple statistics to more descriptive and complex ones which comprise of multivariate matrices. It also allows for the plotting of data within scatterplots, histograms, and others. Essentially, this is a powerful tool, which can aid in deciphering as well as manipulating the survey data. It does not require the researcher to make great efforts or spend extensive time to make sense of the quantitative data. Thus, the data could be generated, presented, and



understood quickly with the help of graphical and tabular output through this tool. This is why it was found appropriate for being used in this study.

3.4.2 Thematic Analysis for Semi-Structured Interviews

Thematic analysis is a tool for acquiring useful and meaningful results from qualitative data (Terry et al., 2017). This allows for the systematic organization and identification of insight regarding the patterns of themes or meanings that are available in a dataset. The researcher is able to make sense of the shared or collective experiences or meanings across the data set. This essentially means that the researcher is able to determine the commonalities within the answers of the participants and attempt to make sense of them (McNeill, 2006). For this study, this approach will be appropriate since it offers flexibility and accessibility. The researcher would be able to code and analysis the qualitative data while identifying the common and meaningful patterns within it.

3.4.3 Data validity and reliability

Guaranteeing data validity and reliability is of great importance in research studies, as it directly affects the findings credibility and trustworthiness. This part discusses the strategies adopted to maintain data validity and reliability, offering a comprehensive understanding of how the study has safeguarded the integrity of its data collection. Data validity pertains to the degree to which research instruments, such as questionnaires and interviews, effectively measure the intended constructs and variables (Mc Burney, 2021). In the context of this study, multiple measures were taken to ensure that the data collected truly represented the constructs and variables under investigation.

The survey questionnaire development was reinforced by a thorough relevant literature review. This extensive literature review provided the foundational concepts and constructs relevant to the research questions. The inclusion of questions based on well-established constructs from the literature ensured content validity (Long, 2017). Consequently, the questions posed in the questionnaire were closely aligned with established theoretical frameworks, strengthening the validity of the content. Furthermore, a critical step in ensuring questionnaire validity was conducting a pilot study with a small subset of participants. The aim was to evaluate the clarity, relevance, and comprehensibility of the questions (Hazzi, Osama and Maldaon, 2015). The feedback garnered from this pilot study was instrumental in refining the questionnaire, resolving ambiguities, and enhancing its



construct validity. Additionally, to enhance content and construct validity, I sought expert opinions in the field. Experts reviewed the questionnaire to validate the chosen constructs and questions, ensuring that the instrument effectively measured the intended variables. In the case of semi-structured interviews, a different approach was adopted. The interviews were constructed based on the research objectives and the emergent themes identified in the literature. This ensured that the interviews focused on pertinent issues, enhancing content and construct validity (Strauss and Smith, 2009). Open-ended questions were designed to provoke comprehensive responses from the project participants, permitting them to freely express their experiences and thoughts (Jackson and Truchim 2002). Expert scrutiny was instrumental in ensuring the interview guide effectively addressed the research questions and objectives. Throughout the interview process, probing questions were employed to delve deeper into the participants' responses, thus enhancing the content and construct validity of the data collected. By maintaining consistency in addressing the research questions, the interviews upheld both content and construct validity.

Reliability, on the other hand, pertains to the consistency and stability of data collection methods (Marshall and Cox, 2008). For this study, both the questionnaire and interview processes were meticulously designed to ensure reliability. The reliability of the questionnaire was ascertained through a test-retest approach. A subset of the questionnaire was distributed to a sample of research participants at two different times. Through comparison of the responses from these two administrations, the study aimed to identify inconsistencies in participants' answers, thus strengthening the questionnaire's reliability. The incorporation of well-established measurement scales and indices, as outlined in the literature review, further contributed to the questionnaire's internal reliability (Etchegaray and Fischer, 2010).

Semi-structured interviews-maintain reliability by adhering to a structured interview guide throughout the data collection process. Every interview was performed by a similar researcher, guaranteeing consistency in the interview administration. Post-interview, the transcripts were carefully reviewed to identify variations, and expert input was sought to ensure the reliability of data collection methods.



3.5 Research Framework

The research framework employed in this study systematically guides the progression of the research from its initial stages to the eventual generation of conclusions and recommendations. This research follows the progression as shown in the following figure. The research journey commences with the pivotal step of topic selection. In this case, the chosen focus is the examination of contract selection systems within Kuwait. This careful selection marks the inception of a detailed exploration into the nuances of this specific area within the construction industry. It lays the foundation for the subsequent phases of the research. The next stage in this systematic process entails a meticulous delineation of the problem at hand. This involves identifying and elucidating the challenges and gaps present in the existing landscape of contract selection systems. The development of clear aims and objectives follows suit, serving as the guiding stars for the study. They provide the essential direction that the research endeavours to follow, ensuring that the exploration remains purposeful and goal-oriented. Additionally, a robust research plan takes shape at this juncture, outlining the strategies and methodologies that will be employed to achieve the research objectives. This concerted effort culminates in the formulation of a comprehensive research proposal.



Figure 3.8 Research framework.



Phase 1 of the research is dedicated to a comprehensive review of existing literature. This stage involves an extensive survey of academic and industry-related materials. The literature review is an integral component as it furnishes the research with essential background knowledge, facilitating a profound understanding of the subject matter. It serves to underscore the significance of the research by identifying gaps and limitations in the current body of knowledge, thus highlighting the necessity of this study. In Phase 2, the focus shifts towards the development of the research methodology. This stage is instrumental in ensuring that the research is conducted with precision and reliability. It encompasses the careful planning and execution of data collection methods. Piloting is carried out not only for survey questionnaires and interviews but also for case studies. This phase involves rigorous testing and refining of data collection instruments. It ensures the effectiveness in gathering pertinent information to allow the development of primary data collection methods including survey questionnaires and semi-structured interviews, which specifically focus on obtaining information that is not only updated but highly specific to this topic to ensure that the existing literature gap can be addressed effectively. Surveys and individual interviews take centre stage in Phase 3. The primary data collection methods are deployed, targeting a diverse pool of participants. All the participants who participate in the survey questionnaires will also be included in the semi-structured interviews to ensure that only relevant information is being acquired on the topic. These data collection efforts lead to a wealth of information, which is meticulously processed and analysed. The results of this phase are critical, as they constitute the empirical foundation upon which the subsequent phases are built. Data analysis is carried out with rigour, allowing for the extraction of meaningful insights. Phase 4 entails the development of a conceptual framework. This phase involves synthesising the findings of the research, which are then combined with the literature review insights. The conceptual framework serves as a crucial bridge between the empirical data and the overarching conclusions and recommendations. It is here that patterns and relationships between variables become evident, shaping the subsequent stages of the research. The final destination of this meticulously structured research journey is the formulation of conclusions and recommendations. Drawing from the accumulated knowledge and the insights gained from the research, this phase presents a comprehensive overview of the study's findings. Furthermore, it delineates a set of well-informed



recommendations aimed at benefiting the construction industry in Kuwait with respect to contract selection systems. These recommendations encapsulate the essence of the study, providing valuable insights that can drive practical change and innovation in the field.

It is crucial to ensure that the study will be done in a practical manner. This is not only to ensure the accuracy of information but also to acquire results, which will be meaningful at the conclusion of the research process. All the participants who participate within the survey questionnaires will also be included in the semi-structured interviews to ensure that only relevant information is being acquired on the topic. The last step within the methodology for this research process will be developing the relevant recommendations that would benefit the construction industry of Kuwait due to appropriate contract selection systems.

3.5.1 Research Location & Duration

The research locations for this study will be Kuwait and the UK. Kuwait, being the focal point, holds immense significance as it represents the primary context for investigating and understanding contract selection systems in local construction projects. The duration of this research study will be 36 months.

3.6 Ethics consideration

Ethics are one of the most crucial aspects to consider when conducting any research to protect the safety and dignity of the individuals involved in the study. First and foremost, informed consent will be a fundamental aspect of this research. All participants involved, whether in the survey questionnaires or the semi-structured interviews, will be given clear, concise, and detailed information concerning the purpose of the study, objectives, and possible implications. Additionally, they will be given the chance to willingly consent to their participants will be respected, ensuring that they are not coerced or misled in any way. Participants will be given the opportunity to ask their questions and offer intentional consent, knowing they can pull out from the study willingly and fully without any penalties. Moreover, this research will uphold a strict code of confidentiality. The presonal identifiers of participants will be eliminated from the research data, and then pseudonyms will be employed to protect their identities. Only authorised research personnel will be given access to the research data. Additionally, the research data will be used exclusively for the study's purpose. Any personal or sensitive information will be anonymized and de-identified for the



privacy of the participants. Their data will be strictly secured and destroyed once the objectives and aim of the study have been accomplished. This approach is crucial to establishing trust with the participants and encouraging honest and open responses (Fotrousi, Seyff and Börstler, 2017). The research will also respect the principles of beneficence and non-maleficence. It means that the study aims to maximise the benefits while minimising potential harm. The participants will be asked questions that are relevant to the research objectives and will not involve intrusive or harmful inquiries. Additionally, the findings of the research will be used to develop recommendations that can potentially benefit the construction industry in Kuwait, aligning with the principles of beneficence.

Furthermore, the research will be conducted in compliance with the ethical guidelines and standards set by applicable institutional review boards as well as ethical committees, ensuring that it meets all ethical requirements in both Kuwait and the UK. Any potential ethical issues or concerns that may arise during the study will be addressed promptly, and corrective actions will be taken to protect the rights and well-being of participants. The principle of respect for individuals will be upheld all over the process of research, which means that participants will be handled with dignity, their choices and opinions will be respected, and no harm will come to them as a result of their participation (Stewart, Fenn and Aminian, 2017). Lastly, the research will be conducted transparently and honestly. Findings will be reported accurately, without manipulation or misrepresentation. The research methodology and processes will be documented in detail, ensuring that the study can be replicated and verified by other researchers. Any potential conflicts of interest, sources of funding, or affiliations will be disclosed. The research will adhere to rigorous academic and professional standards, fostering trust and credibility within the research community (Jeanes, 2017). Lastly, participants will have the opportunity to receive feedback on the research findings if they desire. Additionally, after their involvement in the study, they will be debriefed, ensuring that they leave the research process with a clear understanding of its purpose and potential implications.



3.7 Summary

The research methodology adopted in this study serves as the backbone of the entire research process. It has been meticulously designed to ensure that the data collected is robust, reliable, and capable of addressing the research objectives with precision. The first step in the methodology was problem definition, a crucial foundation for any research endeavour. It required the identification of a research problem that was not only relevant but also carried immense significance within the context of the Kuwaiti construction industry. Through a systematic examination of the current state of contract selection systems, this research pinpointed key areas that demanded scrutiny. It identified challenges, inefficiencies, and gaps within existing systems. This problem definition process paved the way for the formulation of a precise problem statement, encapsulating the specific issue the research aimed to address. It also led to the establishment of clear and well-defined research objectives that outlined the goals and aims of the study. Additionally, this phase was instrumental in generating well-crafted research questions, serving as the compass for data collection, analysis, and the ultimate formulation of conclusions.

The second step in the research methodology involved an extensive literature review. It constituted a foundational pillar of the research by immersing us in the vast realm of knowledge, theories, and findings pertaining to contract selection systems in Kuwait. The literature review not only unearthed the diverse types of contracts employed in the construction sector but also illuminated the challenges that confront these systems. It underscored the considerable influence of government agencies and their role in shaping the landscape of contract selection. This phase further enriched the research by identifying gaps and limitations within the existing body of knowledge, thereby guiding our mission to contribute meaningful insights and recommendations. The literature review was not just an intellectual exercise; it was a quest to extract practical insights and knowledge that could shape the subsequent phases of the research.

For the research methodology, a combination of survey questionnaires and semi-structured interviews was employed to ensure that the research gathered both quantitative and qualitative data. This deliberate choice was influenced by the nature of the objectives of the research and the research questions. By including survey questionnaires, a substantial volume of structured data was collected, enabling quantitative analysis (Rice et al., 2017).



A notable feature of the research methodology is the meticulous attention to validity and reliability. To ensure content validity, the survey questionnaires were developed based on a thorough literature review, drawing on established constructs and theoretical frameworks. The involvement of experts in the field further strengthened the content validity, ensuring that the chosen constructs and questions effectively measured the intended variables. The pilot testing of questionnaires also contributed to content validity, ensuring that the final questionnaires were clear and capable of yielding the desired data. The validity of the construct was augmented through the alignment of the research questions with the developed theoretical frameworks. The extensive literature review laid the foundation for this alignment, making certain that the research was anchored in relevant and wellestablished constructs. In the case of interviews, analytical questions were used to delve deeper into participants' responses, enhancing both content and construct validity. Reliability was also a paramount concern in this research methodology. For survey questionnaires, a test-retest approach was employed to assess the stability and consistency of data collection. This involved administering a subset of the questionnaire to the research participants differently two times. By comparing responses from these two administrations, the research aimed to identify inconsistencies and enhance the questionnaire's reliability. The incorporation of well-established measurement scales and indices further contributed to the questionnaire's internal reliability. The consistency of the interviews was obtained through the use of a single researcher in conducting all the interviews. This ensured uniformity in the administration of the interviews and reduced potential sources of variation. The research framework also played a crucial role in structuring the research methodology. It systematically guided the progression of the research from its inception to the eventual formulation of conclusions and recommendations. Each phase of the research was carefully designed to build upon the previous one, allowing for a logical and purposeful progression. The ethical considerations embedded within the research methodology upheld the principles of informed consent, confidentiality, and respect for participants' rights. These ethical safeguards were essential in protecting the safety and dignity of the individuals involved in the study, ensuring that they were not coerced or misled in any way. The transition from data collection to in-depth exploration and understanding of the collected information marked the sixth step in the research methodology. To analyse the survey data, the



Statistical Package for the Social Sciences (SPSS) tool was used, enabling the understanding of responses collected through the questionnaires. The use of SPSS enabled the generation of various statistical techniques and informative visual representations, offering valuable insights into patterns, trends, and relationships within the data. On the other hand, the thematic analysis approach was employed for analysing the semi-structured interview data. This qualitative method unveiled the nuances and complexities within participants' responses, extracting meaningful insights from their qualitative input. The findings from this phase were instrumental in fulfilling the research objectives, ensuring that the research aims and objectives were met and that the collected data aligned with or challenged the existing literature.



CHAPTER FOUR

Establishing details of the system used to select contract forms in Kuwait.



4 Establishing details of the system used to select contract forms in Kuwait.

This chapter embarks on a comprehensive exploration of the data gathered, aiming to unravel the intricate dynamics governing the selection of standard contract forms in Kuwait's public sector construction projects. The overarching aim is to analyse the findings, shed light on the factors influencing the choice of contract forms, and subsequently, draw meaningful conclusions that contribute to bridging the identified gap in the existing research landscape. The primary aim of this chapter is to dissect the multifaceted aspects influencing the selection of standard contract forms as well as to define the impact of time, risk, size, funding, sector, and responsibility on the selection of contract forms and, to scrutinise the variations and commonalities in the approaches adopted by different organisations with a keen focus on organisations (A, B, C, D) in Kuwait's public sector within further investigation, paving the way for future research directions.

This study addresses a significant gap in research concerning the processes of selecting standard contract forms for Kuwaiti construction projects. While foundational theories exist in construction management literature, their contextual application within the Kuwaiti public sector is not adequately explored. Chapter 2's theoretical foundations expose established concepts in construction management and emphasise the need to align contract forms with project characteristics and organisational goals, necessitating a dedicated exploration due to Kuwait's unique socio-economic landscape and regulatory frameworks.

The presentation highlights organisations' preferences and practices, emphasising the role of time, risk, size, funding, sector, and responsibility. The chapter interprets and examines implications for Kuwait's construction industry, contributing to knowledge and laying the groundwork for refining contract selection processes. With a logical progression, this exploration informs readers about the unique dynamics in Kuwait's public sector contract form selection, making a substantial contribution to the field.

4.1 Quantitative: Data Analysis

The survey deals with two main sectors of Kuwaiti construction projects, that is, the public sector as well as the private sector. The private sector in Kuwait includes the consultant office and contractor company, while the public projects focus on the practical sector related to the project, which includes the Ministry of public works, Housing, Electricity & Water,



Defence, and the Kuwait Oil Company. The surveys were administered through emails or in person between June 22 and August 22 2022. From the initial data presented, the researcher hoped that all of the 200 to 250 respondents would submit their responses. However, the author received only 92 responses. The research understood that the administered surveys would not be 100% effective. Additionally, the researchers understood that the correspondents would not understand some of the questions. Table 4.1 shows the questionnaire structure used for this study.

Table 4.1 structure of the questionnaire designed for this study.

Section	Focus	Questions	
1	Participants Profile		
n	Collection of data concerning the Standard forms, PDS and payment term	7.1 - 7.14	
Z	used for construction projects in Kuwait		
3	Collection of data concerning the system used to select contract forms for	8.1 - 8.15	
	construction projects in Kuwait	9 - 10	
4	Collection of data concerning the strengths and weaknesses of the system	11 -12	
	used to select contract forms for construction projects in Kuwait		

4.1.1 Background information on survey respondents

The data collected was obtained from groups that had been working on a construction project in Kuwait and dealt with different types of contract forms, project delivery systems and terms of payment. This survey was used before the final study as a test run before, which was responded to by a different category, Figure 4.1



Figure 4.1 Statistical Representation of professions in the Construction Industry in Kuwait

Fig. 4.2 indicates that the participants of the survey were grouped with respect to their professions. Engineers formed 84% of the participants, while people who fell into the category of architects made up 16% of the total number of people who took part in the survey. Professions involved in construction projects apart from engineers and architects were classified collectively as "others," since their percentages would be quite insignificant. If collected separately. Our sample indicates that there are more engineers involved in engineering projects than in any other related profession.



Figure 4.2 Statistical representation of Division of labor in Construction Industry in Kuwait.

Fig 4.2 represents the division of labour at construction sites. In a typical construction site, there will be a consultant, a contractor, an engineer, and other duties, such as those of secretary, supply chain manager, and administrator, among others. The sample indicates that employers form 40% of the personnel engaged in Kuwait construction projects, while consultants, contractors, and other professions form 34%, 22% and 4% respectively, Fig 19. Employers are the representatives of the client; they are the ones on behalf of whom the project is carried out. Consultants are mostly engineers who are employed in the project to facilitate the project design, planning, funding, and effective execution. Contractors execute the project as instructed, while the other professions are there to that ensure all aspects of the project run smoothly. Other roles would include project managers, contract specialists, and site engineers. These roles exist to complement the traditional roles. The consultants, for instance, should produce a consultant engineer and a resident engineer, who doubles up as the project manager. The contractor also needs to produce a site engineer for any given project. As indicated, these sub-roles (the project manager and site engineer/consultant engineer) contribute, respectively, 36% and 35% of the labour at a construction site. 29% of the labour in Kuwait's construction industry is made up of contract specialists who are responsible for effective contract execution, by coordinating with external and internal parties. Fig 4.3 shows the distribution of levels of experience in the Kuwait construction projects.


Figure 4.3 Levels of experience in the Kuwait Construction Industry

According to Fig. 4.3, 25 participants had more than 30 years' experience in the industry and 16 had experience that spanned between 20 to 30 years. 26 professionals had experience of between 10 to 20 years and there were 21 with experience spanning less than ten years. The rest of the participants (4) had no experience. The rate of understanding the process used to select contract forms to be used on construction projects in Kuwait is presented in Table 4.2

Rates of Understanding the process used to select contract forms									
1	2	3	4	5	6	7	8	9	10
1.1%	2.2%	1.1%	3.3%	7.6%	8.7%	17.4%	29.3%	18.4%	10.9%
Very Low Low				Hi	gh	Very	High		
3.3	3%	4.4	4%	Medium		46.7%		29.3	
7.7%		16.	3%	76%					
Low level of understanding					High	level of u	Indersta	nding	

 Table 4.2 Rates of Understanding of the respondents.

Table 4.2 indicates that a high level of understanding was around 76% (46.7% was a high level, and 29.3% was a very high level). The medium level was around 16.3%, while a low level of understanding was 7.7%. The result shows that the participants have a high level of understanding of the construction industry, including the contract documents, management, and rules and regulations that govern the industry. The respondents are, therefore, qualified to take part in this study, and their responses will be of great use. The construction industry has various sectors and forms the backbone of most industries. Different people were selected from different sectors for the purpose of the study, as shown in Figure 4.3.



As shown above, the research participants were selected from all the sectors within the construction industry. This makes the responses that were received even more comprehensive and representative of the construction industry in general. Most of the respondents work in the housing and major construction sectors. The smallest percentage of respondents came from the military and oil sectors, as well as the 'mix-use' commercial, health, education, and infrastructure sectors. The most important aspect of this analysis was to ensure that all the major construction sectors were well represented in the study. An initial review of the data revealed that the existing system used to select the contract forms in Kuwait included a range of different standard forms of contract, and project delivery systems, such as:

- Traditional Design Bid Build (DBB),
- Design and Build (D&B),
- Turn-Key Projects,
- Management Contracting
- Partnering (PPP)

The data also revealed that several sorts of payment terms, such as: Lump Sum, Unit Price or Bill of Quantities, Cost Plus and Guaranteed Maximum Price are actively being used in Kuwait. Some of these forms of contract are popular, while others are used less frequently. To summarise, the background information of the respondents will be analysed by means of questions 7 and 8 (standard forms of contract, project delivery system, payment terms, etc.) and into four major categories, namely organisations and roles in the project, levels of understanding, and levels of experience (Table 4.3).

Factors considered								
Levels of experience		Organisation		Roles on the project		Levels of Understanding		
0	No experience	0	Employer	0	Project Manager	0	High understands.	
0	Less than 10 years	0	Contractor	0	Consultant / Site	0	Med- understand.	
0	10 to 20 years	0	Consultant		Engineer	0	Low understand	
0	20 to 30 years			0	Contract Specific			
0	Above 30 years							

 Table 4.3 Summary of the factors considered in the background study.



4.1.2 The Standard Form, Project Delivery System and Payment Term of contract used on the construction project in Kuwait.

This section will present and analyse details of the existing system used to select contract forms in Kuwait. It will also analyse the sorts of standard forms of contract, project delivery systems such as: the traditional Design Bid Build, Design and Build, Turn-Key Projects, Management Contracting and Partnering as well as a several sorts of payment terms, such as: Lump Sum, Unit Price or Bill of Quantities, Guaranteed Maximum Price, and Cost Plus.

• The Standard Forms used on the construction projects in Kuwait.

This research addresses a notable gap in the literature concerning the utilisation of standard forms in Kuwaiti construction projects. The existing literature on contract management lacks a detailed understanding of the standard forms employed in Kuwait's public sector construction, creating a void in comprehending the specificities of contractual frameworks in this context. Chapter 2's foundational knowledge from authors like Kuzman et al. (2017), Soliman (2017), and Myeong et al. (2018) emphasised the alignment of contract forms with project characteristics and organisational goals. However, these theories were broad and lacked the specificity required for Kuwait's construction landscape. This study contributes fresh perspectives by offering a detailed examination of standard forms in Kuwaiti construction, recognising the inadequacy of a one-size-fits-all approach due to Kuwait's unique socio-economic and organisational dynamics. As this PhD navigates the unexplored territory of standard forms in Kuwait, it significantly contributes to new knowledge and understanding. The insights surpass generic literature, providing a comprehensive analysis of preferred forms, the rationale behind their selection, and the contextual factors influencing decisions. This understanding extends to the interplay between project characteristics, funding sources, and organisational structures, enriching the broader field of construction project performance. This contribution serves as a valuable resource for practitioners, policymakers, and researchers in similar complex contexts.

Table 4.4 shows the standard contract forms normally applied toconstruction projects in Kuwait. Kuwaiti domestic forms were proven to be the most popular standard form, since 69.6% of the participants claimed to have often interacted with them, while 25% of the participants claimed to have used it sometimes and only 3.3% respondents claimed to know nothing about it and 2.2% of the respondents selected 'never' in the questionnaire. FIDIC



was the second most popular standard form of contract, with 8.7% respondents saying they used it often and 40.2% respondents claiming they used it sometimes. A high number of those selected did not know it and had never used it. However, the remaining types of contract forms, such as NEC, JCT and ICC, were not known in construction projects in Kuwait since above 60% selected 'I do not know' while the second highest number of participants selected "never" in between 24% to 30%. With a majority of the participants stated either that they have never used them or that they knew nothing about them.

In general, the mean for Standard Forms of contract in construction projects in Kuwait was 1.05, median 1 and SD 0.5.

STANDARD FORMS OF CONTRACT	Often	Sometime	Never	I Do not know	
Kuwait Domestic Form of Contract	(69.6)	(25.0)	(2.2)	(3.3)	
FIDIC forms of contract	(8.7)	(40.2)	(19.6)	(31.5)	
JCT Forms of contract	(2.2)	(5.4)	(30.4)	(62.0)	
ICE/ICC Forms of contract	(2.2)	(7.6)	(26.1)	(64.1)	
NEC/NCC Forms of contract	(2.2)	(6.5)	(23.9)	(67.4)	
Total	Mean	Median	SD		
	1.05	1		0.5	

 Table 4.4 The Standard Form of contract used on the construction project in Kuwait.

It shows that the participants with more than 30 years of experience usually selected the contract form most often used in Kuwaiti construction projects, The KWT form and the FIDIC were sometimes selected (52%), while the other sorts of contract forms were mostly unknown, since 56% and 72% selected "I do not know". In addition, the result in details shows that the participants with a high level of understanding of contract forms selected the contract form most often used; the KWT form and FIDIC were sometimes selected (40%) while the other sorts of contract forms were mostly unknown since 53.3% and 71.4% selected "I do not know". These results show that most of the participants did not know about those forms.

These results give a clear indication and summary of the common forms of contract for construction projects in Kuwait. Kuwaiti domestic forms and FIDIC are the most common standard forms of contracts used, and the majority of the professionals in the industry are quite conversant with them. Although this survey included various professionals working on construction projects who were highly experienced and high level of understanding of



contact forms, the options most frequently selected were "never" and "I do not know". These results provide a clear indication that those participants have sufficient knowledge to deal with a contract form rather than the system for selecting the contract.



Figure 4.4 S.F of contracts as influential factors in contract forms selection in the construction projects in Kuwait. "Chi square test"

Figure 4.4 above shows that the KWT domestic form of contract and NEC/NCC forms of contract have not been affected by any factor (P-value >0.05). FIDIC forms of contract were affected by all factors (P-value <0.05) except 'understanding of contracting forms.' (P-value=0.532>0.05). ICE/ICC forms of contract were influenced by all the factors (P<0.05) except 'organisation' (P-value =0.132>0.05). Lastly, JCT contract forms were influenced by 'levels of experience' (P-value=0.044<0.05). Generally, the standard contract forms have been influenced by various factors like experience level, organisation, project roles, and comprehension of contract forms.

In exploring Kuwait's construction projects, this study addresses a significant gap in the literature, unravelling the intricacies of standard forms, project delivery systems, and payment terms. Existing theories proved insufficient for Kuwait's unique socio-economic context, prompting a deeper analysis. The research not only bridges this gap but also provides a nuanced understanding, surpassing generic insights. Kuwaiti domestic forms, especially the KWT form, dominate, while FIDIC emerges strongly, albeit with awareness gaps. NEC, JCT, and ICC forms remain largely unknown. The revelation that experienced participants lack knowledge beyond familiar forms highlights the study's impact. The



research dissects influential factors affecting standard forms, such as experience, organisation, project roles, and understanding of contracting forms. This nuanced perspective informs a context-specific contract selection approach. Essentially, this PhD enriches construction project management by uncovering Kuwait's contract intricacies, serving as a valuable resource for practitioners, policymakers, and researchers navigating similar complexities.

• The Project Delivery Systems used in construction projects in Kuwait.

In investigating into the realm of project delivery systems within Kuwait's construction projects, this study identifies a critical gap in the existing literature, specifically the absence of detailed insights into the intricacies of these systems. The start of this research began by characterising the landscape with a lack of thorough understanding concerning the project delivery systems used in Kuwait construction projects. While existing literature, particularly in Chapter 2, offered valuable theoretical frameworks from authors such as (Kuzman et al., 2017) and (Myeong et al., 2018), these frameworks, though insightful, lacked the requisite specificity to navigate the complexities of Kuwait's construction environment. The need for a more granular comprehension of project delivery systems within the unique socio-economic and organisational dynamics of Kuwait became evident.

This research contributes new insights by unravelling the layers of project delivery systems, surpassing the limitations of generic theories. It elevates the discourse from broad theoretical foundations to a focused analysis of the specific systems preferred in Kuwaiti construction projects. The study sheds light on the rationale guiding the selection of project delivery systems and the contextual factors influencing these decisions. By doing so, the PhD transcends the existing literature's scope and enriches the field of construction project management with context-specific knowledge. Practitioners, policymakers, and researchers operating in environments analogous to Kuwait's construction landscape can benefit significantly from the nuanced understanding provided by this research. In essence, this section of the PhD stands as a testament to its overarching goal of contributing substantial new knowledge and understanding to the subject area, addressing the identified gap in the literature.

The traditional design bid build was the most common of all the six systems presented, with 71.1% of the participants stating that they use it often, while all other sorts of delivery systems ranked closely to each other and were being used in Kuwaiti construction projects



since the most frequently selected were between 45.7% and 69.9%. In total, Table 4.a shows that a high percentage was selected (i.e., 'do not know' and 'never') for management (contracting and partnering delivery system), where the percentage of participants stating, 'do not know' was between 18.5% and 21.7%, while between 15.2% and 16.3% answered 'never'. These results led the author to explore those respondents in depth to find which sub-group selected the highest percentage of "I do not know" and "never" for management contracting and partnering delivery systems. Overall, the mean for Standard Forms of Contract in construction projects in Kuwait was 1.91, with median 2 and a SD 0.55.

PROJECT DELIVERY SYSTEM (PDS)	Often	Sometime	Never	l Do not know
Traditional Design bid Build	(71.1)	(18.5)	(6.5)	(3.3)
Design and Build	(20.7)	(64.1)	(7.6)	(7.6)
Turn-key Project	(28.3)	(45.7)	(12.0)	(14.1)
Management Contracting	(18.5)	(47.8)	(15.2)	(18.5)
Partnering	(16.3)	(45.7)	(16.3)	(21.7)
Total	Mean	Median	SD	
	1.91	2		0.55

Table 4.5 The Project Delivery System of contract used on the construction project in Kuwait.

In addition, it illustrates the results in detail and shows that most of those who selected 'I do not know' had a low level of understanding of the contract form (43%), while there was also a percentage that selected 'I do not know' who had a mid-level and high level of understanding (26% and 18%). As well as showing that the contractors and site/consultant engineer both scored around 30%. In addition, the management contracting delivery system was selected as having the second highest percentage, with Contract Specialists and a high level of understanding of contracts.

These results show that most of the participants selected the "sometime" option for those delivery systems being used in Kuwaiti construction projects. Indeed, all the project delivery systems are present in the construction projects in Kuwait, but some, as stated above, are more popular than others. I believe that the most popular system is viable in the majority of the sectors, while the suitability of the rest of the systems varies with sectors and the nature of the project, hence the above results.





The project delivery system has been influenced by levels of experience, organisation, roles in the project and comprehension of contracting forms. Table 4b indicates that, the project delivery system is not influenced by factors (P-value >0.05) except that the Build Operation Transfer is influenced by Project Roles (P-value= 0.026<0.05) and partnering is influenced by the Levels of experience (P-value= 0.021<0.05).

In Kuwait's construction projects, the traditional design-bid-build system prevails, with 71.1% frequently opting for it. Contrastingly, management contracting and partnering systems reveal significant 'do not know' (18.5%-21.7%) and 'never' (15.2%-16.3%) responses, particularly among those less familiar with contract forms (43%). Noteworthy groups, including contractors and individuals with a high understanding of contracts, consistently scored around 30% in the 'I do not know' category. The mean project delivery system score is 1.91, emphasising the dominance of specific systems. 'Sometimes' responses suggest a varied usage of delivery systems, aligning with diverse sector and project demands. Influential factors like experience, organisation, roles, and understanding of contracting forms generally bear minor impact, except for distinct instances like the role of 'Build Operation Transfer' (BOT) influenced by project roles and 'Partnering' influenced by experience levels. These nuanced findings significantly contribute to comprehending Kuwait's construction practices, enriching the understanding of system preferences, awareness levels, and impactful factors in this domain.

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• The Payment Terms used in construction projects in Kuwait.

In exploring the Kuwaiti construction projects of payment terms, this research fills a significant void in the existing literature by emphasising the scarcity of detailed insights into these intricacies. Existing theoretical frameworks, while valuable, lacked the specificity required to navigate Kuwait's socio-economic and organisational dynamics. This identified gap underscores the need for a nuanced comprehension of payment terms, specifically tailored to Kuwait's construction sector. The study contributes fresh perspectives and substantial knowledge by unravelling the layers of payment terms, aiming to offer a detailed examination of prevalent terms, the rationale guiding their selection, and the contextual factors influencing these decisions. Preliminary findings indicate a diverse landscape with the Lump Sum method as the predominant payment term. However, variations in understanding and utilisation, such as Unit Price, Cost Plus, and Guaranteed Maximum Price, highlight the complexity requiring detailed exploration. Factors like project characteristics and organisational structures play essential roles in shaping payment term choices. This nuanced understanding is crucial for practitioners, illuminating the interplay between financial models, project dynamics, and contractual frameworks. As the study progresses, it aims not only to contribute to Kuwait's construction context but also to enrich the broader field of construction project management, offering valuable insights for decision-makers in Kuwait and similar contexts.

The payment terms in a contract are usually dictated by the standard form of the contract (the specifications chosen) and the nature and extent of the project. The most common payment terms for Kuwait construction projects are as outlined in Table 6 below. Lump sum payment terms, according to the survey, are the most common of the four payment terms presented. Many professionals have indicated that they have often used lump sum as a payment term in a construction project. 77.2% of the surveyed participants claim to use it often, while the rest use it in some cases. The unit price payment method is the second most popular payment term, with 45.7%, 44.6% participants claiming to have used it 'often' and 'sometimes' while 4.3% to 5.4% of participants claimed to have 'never' used It in their career and 'did not know it'. However, the result shows that Cost plus Payment terms are used in Kuwaiti construction projects, since 46.7% of the participants selected "sometime," while a few participants selected "often" (2.2%). In addition, all the others selected either "never" or "I do not know," with 22.8% opting for each of these options. Furthermore, GMP is the



least popular method as it is either 'sometimes' or 'often' used by the participants (2.2% and 23.9 while the highest selected percentage was 'never' with 46.7% of participants. 'I do not know' was selected by around 27.2%. These two options might mean that there is no evidence of the use of this type of payment term in construction projects in Kuwait. The mean for payment terms in construction projects was (1.75), median (1.8) and SD (0.53).

PAYMENT METHODS	Often	Sometime	Never	l Do not know	
Lump Sum	(77.2)	(20.7)	(1.1)	(1.1)	
Unite Price or Bill of Quantities	(45.7)	(44.6)	(4.3)	(5.4)	
Cost Plus (Cost Reimbursable)	(7.6)	(46.7)	(22.8)	(22.8)	
Guaranteed Maximum Price (GMP)	(2.2)	(23.9)	(46.7)	(27.2)	
Total	Mean	Median	SD		
10101	1.75	1.8	0.53		

Table 4.6 The Payment Term of contract used in construction projects in Kuwait.

The result in details shows that those who most often selected 'sometimes' for GMW payment terms were project managers and consultants, who scored 25.5%. At the same time, the most often selected by consultants was 'I do not know' at 41.9%. However, the second highest selected by those with a high level of understanding was "I do not know" while participants with a low level of understanding of contract forms also selected "I do not know" 43% while there was also a percentage selecting "I do not know" who had mediums and high levels of understanding 26% and 18%. In addition, the contractors and site/consultant engineers were around 30% for both.

As stated above, a number of factors affect the choice of payment term. The forms most often selected are lump sums. The unit price is popular in construction projects but in different measures, while the cost plus and GMP showed that they may not be used for construction projects in Kuwait. It is evident that lump sums are the most convenient and popular payment mode. Most projects prefer it to other methods. Presumably, the preference is due to its convenience and ease of management.

The terms of payment used in construction projects in Kuwait has been affected by level of experience, organisation, Roles of project and understanding of contracting forms where, Guaranteed Maximum Price (GMP) and Unite Price or Bill of Quantities have been not affected by any factor (P-value >0.05) except Unite Price or Bill of Quantities has been



affected by Levels of experience(P-value=0.047<0.05). Lump Sum has been affected by all factors except Organisation (P-value=0.762>0.05). Cost Plus (Cost Reimbursable) has been affected by Organisation and Roles on the project (P-value =0.014,0.048<0.05, respectively).



Figure 4.6 P.M of contract in the construction project in Kuwait influential factors. "Chi square test"

In conclusion, this comprehensive examination of payment terms in Kuwait's construction projects reveals insightful patterns and preferences. The study identifies Lump Sum as the most common payment term, preferred by 77.2% of participants, showcasing its convenience and popularity in project management. Unit Price follows with diverse usage, while Cost Plus and Guaranteed Maximum Price (GMP) exhibit lower adoption rates, suggesting limited application in Kuwait's construction projects. Factors influencing payment term choices include project characteristics, organisational structures, and roles in the project. Notably, Lump Sum is affected by various factors, highlighting its adaptability. The research underscores that, despite being the least popular, GMP and Cost Plus are still selected in certain contexts. The nuanced understanding of payment terms and their influencing factors contributes significantly to construction project management insights, aiding practitioners, policymakers, and researchers. As a crucial component of the overarching goal, this research provides substantial knowledge, addressing gaps in existing literature and fostering informed decision-making in Kuwait's construction projects, with potential applicability in similar contexts globally.



4.1.3 Modifying the standard from for construction projects in Kuwait.

In this section, the survey was divided into four different categories, as outlined in the following sub-sections. As portrayed in the sections, it is essential to establish whether selection and modification of standard forms of contracts are factors of the payment method, project delivery system (responsibility), size of the project, and the sector it falls under, as well as the sources of funding for the project or not. Below is a clear discussion of these factors as surveyed.

Selecting a Specific form according to Payment Terms

This research addresses a notable gap in Kuwait's construction literature, emphasising the lack of detailed insights into the interplay between payment terms and the selection or modification of standard forms. Existing literature fell short of comprehending this nuanced relationship within Kuwait's socio-economic dynamics. The study pioneers an exploration into how payment terms influence the choice or adaptation of standard forms, contributing fresh perspectives and substantial knowledge. It goes beyond generic insights, providing a detailed examination of the intricate relationship and filling a critical void in the literature. By unravelling the factors shaping the selection or modification of standard forms based on payment terms, this research enhances the understanding of construction project management. With lump sum emerging as the most prevalent payment term, the study scrutinises the dynamic nature of payment terms, aligning participant preferences with standard form decisions. This section critically examines the intricate relationship, offering nuanced insights into the factors guiding standard form selection or modification, thereby advancing the field of construction project management.

Table 4.7 illustrates the decision made when selecting a specific standard form for the contract to let on a lump sum/fixed cost basis, re-measurement basis, cost reimbursable / variable fee basis or target cost clauses this part of survey considered on payment term criteria with a different statement.

Table 4.7 shows that, the participants most often used a specific standard form when the contract was let on a lump sum/fixed cost basis and re-measurement basis, since 44.6% and 30.8% respectively selected "often" while a large number of participants selected "neutral" when the contract was let on a cost reimbursable / variable fee basis or a target cost clause, since 36.6% opted for each of them. There was also a percentage of participants who



selected "neutral" for a lump sum/fixed cost basis and for a re-measurement basis 12.6% and 24.4% were selected separately, while most of the participants were between 'rarely' and 'often' and are in the 'neutral' category. The mean was 2.96, median= 3 and SD= 0.77.

Payment terms								
Statement	Never	Rarely	Neutral	Often	Always			
Using a specific standard form when the contract is let on a lump sum/fixed cost basis.	(5.4)	(14.1)	(12.0)	(44.6)	(23.9)			
Using a specific standard form when the contract is let on a re-measurement basis.	(7.7)	(28.6)	(24.2)	(30.8)	(8.7)			
Using a specific standard form When The contract is let on a cost plus / variable fee basis	(15.4)	(31.9)	(36.3)	(16.5)	(0.0)			
Using a specific form When The contract includes target cost clauses	(13.2)	(27.5)	(36.3)	(23.1)	(0.0)			
T -+-1		Median	SD	Min	Max			
rotai	2.96	3	0.77	1	4.5			

 Table 4.7 Effects of Payment terms on standard form selection.

This result motivated the researcher to explore the results in greater depth and compare with different sub-section illustrations, the result in detail shows a high percentage of participants was with whom have a high level of understanding the contract form where those participants mostly selected natural with 36.8% for cost reimbursable/variable fee basis and target cost as well as showed that participants with experience of more than 30 years all selected "neutral" for cost a reimbursable/variable fee basis and target since 36% and 34% selected these respectively while this sub-group stated "always" for a lump sum/fixed cost basis with 48% while "often" and "rarely" for re-measurement basis 36% for each state.



Figure 4.7 Chi square test for the Effect of Payment method on standard form selection with factors.



Figure 4.7 shows that, whereas the Effect of Payment method on standard form selection was affected by' level of experience', 'organisation', 'roles in the project and 'understanding of contracting forms' where, the variable. When the contract is let on a lump sum/fixed cost basis it was affected by 'levels of experience' and 'organisation' (P-value=0.01, 0.005<0.05, respectively), while the other variables (when the contract is let on a re-measurement basis; when The contract is let on a cost reimbursable / variable fee basis; and when the contract includes target cost clauses) were not affected by factors (P-value>0.05) except the variable When the contract was let on a re-measurement basis, it was affected by organisation (P-value=0.001<0.05).

This research therefore addresses a critical gap in the literature by examining the decisionmaking process for selecting standard forms based on payment terms in Kuwait's construction projects. It reveals participants' preferences for standard forms in lump sum and re-measurement scenarios (44.6% and 30.8%, respectively), while neutrality is observed for cost reimbursable and target cost situations. It investigates the nuanced variations based on participants' experience levels and understanding of contract forms. The Chi-square test underscores the influence of factors such as experience, organisation, roles in the project, and understanding of contracting forms on the selection process. This research significantly contributes fresh insights, enhancing the comprehension of decision-making dynamics in construction project management, thereby advancing the field.

Selecting a Specific form according to Project Delivery system

This research addresses a critical literature gap by investigating the selection of contract forms based on the project delivery system in Kuwait's construction projects. The existing literature, while offering valuable theoretical frameworks on standard forms and project delivery systems, lacked a comprehensive exploration of their intricate relationship within Kuwait's unique socio-economic and organisational context. The identified gap emphasised the need for a nuanced understanding of how the project delivery system influences the choice or modification of specific standard forms in Kuwaiti construction initiatives. This study contributes fresh perspectives by investigating the layers of decision-making involved in selecting or modifying standard forms based on the project delivery system. While existing literature provided foundational insights, its limited applicability to Kuwait necessitated an in-depth examination of how prevalent project delivery systems shape the choice of



standard forms, offering a pioneering contribution to the broader understanding of construction project management.

Table 4.8 expresses the decisions made when selecting a specific standard form for the contract to let on a traditional design bid build (DBB) basis, design & build (DB) basis, build operation transfer (BOT) basis, turnkey basis, or partnering agreement basis according to responsibility criteria, which were focused on different statements as shown in Table below. **Table 4.8** Effect of Project Delivery System in Standard Form Selection.

Project delivery system								
Statement	Never	Rarely	Neutral	Often	Always			
Using a specific form when the contract is let on a Traditional Design Bid Build (DBB) basis	(10.9)	(27.2)	(23.9)	(19.6)	(18.5)			
Using a specific form when the contract is let on a Traditional Design & Build (DB) basis	(12.1)	(26.4)	(24.2)	(24.2)	(13.3)			
Using a specific form when the contract is let on a Traditional Build operation transfer (BOT) basis	(7.6)	(26.7)	(24.4)	(32.2)	(8.9)			
Using a specific form when the contract is let on Turnkey basis	(11.0)	(18.7)	(26.4)	(33.0)	(11.0)			
Using a specific form when the contract is let on partnering agreement basis	(11.2)	(21.7)	(27.0)	(33.7)	(5.6)			
Total	Main	Median	SD	Min	Max			
Total	3.01	3	0.93	1	5			

When the contract is let on a traditional design-bid-build (DBB) basis and design and build (DB) basis, they were rarely used as a specific standard form, since 27.2% and 26.4 selected "rarely" respectively. In addition, all the other participants mostly selected "often" with 32.2% for a build operation transfer (BOT) basis, 33% for a turnkey basis and 33.7% for a partnering agreement basis. However, the highest number of participants chose "neutral" for all statements which were between 23.9% and 27%. Furthermore, the mean was 3.01 with median= 3 and SD = 0.93

Indeed, the high percentage of neutrals that were selected, motivated the author to investigate which of the participants most commonly selected 'neutral'. The results are detailed. It shows that 40.7% of participants were employers, and generally they selected neutral for all of the states in the table below, with 40.5% for a traditional design-bid-build (DBB) basis, 29.7% for a build operation transfer (BOT) basis, and 37.8% for the rest of the states. In addition, the results in detail showed that 29.7% of the participants were contract specialists and they mainly selected neutral from all of the states in the table below, with 40.7% of the states in the table below, with 29.7% of the participants were contract specialists and they mainly selected neutral from all of the states in the table below, with 40.7% opting for a traditional design-bid-build (DBB) basis, 33.3% for a design and build (DB)



basis, 37% for a turnkey basis, 46.2% for a partnering agreement basis, and 29.6% for a buildoperation transfer (BOT) basis.



Figure 4.8 Chi square test for the Effect of PDS (Responsibility) Standard form selection with factors Figure 4.8 shows that the effect of project delivery system and Responsibility on the selection of a specific form has been affected by level of experience, organisation, roles of project, and understanding of contracting forms where, the variable When the contract is let on a traditional Design Bid Build (DBB) basis has been affected by all factors except understanding of contracting forms (P-value=0.546>0.05), while the variables "When the contract is let on a Traditional Build operation transfer (BOT) basis" and "When the contract is let on Turnkey basis" have not been affected by factors (P-value>0.05) except the variable When the contract is let on Turnkey basis has been affected by levels of experience (Pvalue=0.044<0.05). the variable When the contract is let on partnering agreement basis has been affected by the organisation and understanding of contracting forms (P-value= 0.044, 0.043<0.05; respectively). Finally, the variable When the contract is let on a Traditional Design & Build (DB) basis has been affected by levels of experience and organisation (Pvalue= 0.019, 0.029<0.05 respectively).

Basically, the employers and the Contract Specialist mostly selected "neutral" for those statements. the participants with a high level of understanding mostly selected "rarely" since 29.5% opted for a traditional Design Bid Build (DBB) basis and 27.3% for a Design & Build



(DB) basis, while the all the other participants selected "often" with 34.2% for Build Operation Transfer (BOT), 36.4% for Turnkey and 35.5% for a Partnering Agreement basis. In conclusion, this research investigates the decision-making process regarding the selection of specific standard forms based on the project delivery system in Kuwait's construction projects, addressing a crucial gap in the existing literature. It outlines participants' decisions for contracts on various bases, revealing a tendency towards neutrality, particularly among employers and contract specialists. The detailed examination expounds on how specific participant groups predominantly chose "neutral" for various project delivery systems. The Chi-square test demonstrates the multifaceted influence of factors such as experience, organisation, roles in the project, and understanding of contracting forms on the selection process. Notably, certain variables, like contracts on a traditional Design-Bid-Build (DBB) basis, are significantly affected by these factors, highlighting the intricate dynamics shaping the selection of standard forms. This research, by unravelling the nuances of decision-making in standard form selection based on project delivery systems, significantly contributes to advancing knowledge in construction project management.

Selecting a Specific form according to Size and Sector

This section of the research bridges a notable gap in Kuwait's construction literature by investigating the selection of contract forms based on project size and sector. At the study's commencement, existing literature offered valuable theories on standard forms but overlooked the intricate link between these forms and project size and sector within Kuwait's unique context. The identified gap underscored the need for a nuanced understanding of how project size and sector influence the choice of specific standard forms in Kuwaiti construction initiatives. The research provides fresh insights by delving into the decision-making layers involved in selecting or modifying standard forms based on project size and sector. By going beyond existing literature, this study contributes significantly to the understanding of construction project management, offering a pioneering exploration into the nuanced relationship between project size, sector, and standard forms in Kuwait's construction landscape.

Table 4.9 illustrates the decisions made when selecting a specific standard form for the contract to let "when the project is large and complex, small and simple, or for a different public sector." This section will consider size and sector criteria by reviewing a different statement as shown in the table below.



Size and Sector							
Statement	Never	Rarely	Neutral	Often	Always		
Using a specific form when the project is let large and complex	(11.1)	(23.3)	(25.6)	(28.9)	(11.0)		
Using a specific form when the project is let small and simple	(5.6)	(24.7)	(25.8)	(30.3)	(13.5)		
Using a specific form for each different public sector	(8.8)	(19.8)	(30.8)	(26.4)	(14.3)		
Total	Main	Median	SD	Min	Max		
rotai	3.08	3	0.99	0	5		

Table 4.9 Effect of Size and Sector on Standard Form Selection.

Generally, the most frequently selected were in between 'often' and 'neutral', where 'often' is selected as a specific standard form when the project is let either large and complex or small and simple, since 28.9% of participants selected "when the project is let large and complex" and 30.3% for "when the project is let small and simple". A number of participants did not provide their views on using a specific form for "each different public sector," and accordingly, they were deemed to have selected 'neutral' around 30.8%. However, the highest second option was selected as "neutral" for "when the project is let large and complex or small and simple". Since around 25% of participants were selected for all of the statements. Finally, the mean was 3.01, with median= 3 and SD=0.93.



Figure 4.9 Chi square test for the Effect of Size and Sector on standard form selection with factors



Figure 4.9 shows that the size and sector of the selection of standard forms has not been affected by level of experience, organisation, roles of project and understanding of contracting forms (P-value>0.05).

In general, there are a high number of participants who do not provide their review for the sub-group of experience, where the most selected was "neutral" with 30.7%. However, the Contract Specialists sub-group were around 28.9% of the participants and most of them did not provide their review since 34.6% of them selected "neutral" for the state "when using specific standard forms for each different public sector"; 26.7% "when the project is large and complex" and 38.5% "when the project is small and simple". Furthermore, the result reveals that a high number of participants did not provide their reviews for most statements in this survey.

In conclusion, this section sheds light on the decisions regarding the selection of specific standard forms in Kuwait's construction projects, considering project size and sector. It reveals that participants often opt for specific standard forms when projects are characterised as large and complex or small and simple, with a substantial portion selecting the "neutral" option for projects in different public sectors. It emphasises the diversity of responses across sub-groups, highlighting that a significant number of participants did not provide reviews for certain survey statements. The Chi-square test indicates that project size and sector do not significantly affect the selection of standard forms concerning factors such as experience, organisation, roles in the project, and understanding of contracting forms. This section of the research offers valuable insights into the nuanced decision-making processes related to project size and sector, contributing new knowledge to the field of construction project management in Kuwait.

Selecting a Specific form according to Funding

This section of the research fills a noticeable void in existing literature through investigating the process of selecting contract forms based on project funding in Kuwait's construction projects. While prior studies provided valuable theoretical frameworks on standard forms, they fell short in comprehensively exploring the intricate interplay between project funding and contract form choices, particularly within Kuwait's distinct socio-economic and organisational environment. The identified gap underscores the necessity for a comprehensive understanding of how project funding serves as a determinant in shaping the selection or modification of specific standard forms in Kuwaiti construction initiatives. The



study contributes novel perspectives and substantial knowledge by unravelling the decisionmaking layers involved in selecting or modifying standard forms based on project funding. It addresses the limited applicability of existing literature to Kuwait's context, offering a thorough examination of how diverse funding sources impact standard form choices, thereby significantly advancing the understanding of construction project management in Kuwait's unique construction environment.

As explained in Table 4.10 below, using a specific standard form, when the project has a supply chainand is privately financed or publicly financed, 'neutral' was often selected, with 30% for "when the project has supply chain" and 24.4% for "publicly financed", while "when the project privately financed" was mostly selected "often" since 30% of participants were selected. However, the second most commonly selected was "rarely" for "when the project had a supply chain or was privately financed", with 28.9% and 26.4% respectively, expect "when the project was publicly financed" since 26,4% selected "rarely" as the second option. In addition, the mean was 2.95 with median= 3 with SD=1.

Funding							
Statement	Never	Rarely	Neutral	Often	Always		
Using a specific form when the project has supply chain	(11.1)	(28.9)	(30.0)	(22.2)	(7.8)		
Using a specific form when the project if privately financed	(8.8)	(26.4)	(18.7)	(33.0)	(13.2)		
Using a specific form when the project if Public financed	(13.3)	(23.3)	(24.4)	(30.0)	(8.9)		
Total	Main	Median	SD	Min	Max		
	2.95	3	1	0	5		

Table 4.10 Effects of Funding on standard form selection.

The result, in detail, illustrates that 28.6% of participants were Contract Specialists. The latter mainly selected "neutral" for all states "when the project had a supply chain, was privately financed or publicly financed, with 42.3%, 34.6% and 26.9% respectively. In addition, it shows that 40.7% of participants were employers who mostly selected "neutral" for "when the project had a supply chain or was privately financed, with 35.1% and 37.8% respectively, expect" when the project was Public financed" since 32.4% selected often the most chosen. Basically, the "Employers" and "Contract Specialists" sub-groups mainly selected "neutral" for those statements, while the most of the participants with more than 30 years' experience selected "rarely" for funding criteria, with 33.3% selecting "when the project had as supply



chain", 37.5% "when the project was privately financed" and 41.7% "when the project was Publicly financed".



Figure 4.10 Chi square test for the Effect of Funding on standard form selection with factors

Figure 4.10 shows that the source of funding for the selection of a specific form was affected by level of experience, organisation, roles in the project, and understanding of contracting forms. The result shows that the selection of a specific form of funding was not affected by any factor except the variable "when the project supply chain is affected by the organisation (P-value =0.043<0.05) and the level of experience influences the variables when the project is privately financed and when the project is publicly financed (P-value=0.006,0.011<0.05). In conclusion, this section of the research sheds light on the intricate dynamics of selecting specific contract forms based on project funding in Kuwait's construction projects, offering valuable insights into decision-making processes. It reveals that 'neutral' was often selected for projects with a supply chain that were publicly financed, while 'often' prevailed for privately financed projects. Notably, 'rarely' emerged as the second most common choice for supply chain and privately financed scenarios. The analysis reveals how different subgroups, such as contract specialists, employers, and experienced participants, exhibit distinct preferences. The Chi-square test underscores that the source of funding's impact on form selection is influenced by factors like experience, organisation, roles in the project, and understanding of contracting forms. This section of the research, by uncovering the relationship between project funding and form selection, significantly contributes to the understanding of construction project management, providing valuable knowledge for practitioners, policymakers, and researchers navigating Kuwait's construction projects.



4.1.4 Summary of the Quantitative

This study investigates the selection of standard contract forms in Kuwait's construction industry, exploring how payment methods, project size and type, and delivery systems affect this choice. The literature review revealed gaps in the knowledge of how these factors influence the preference for contract forms. The study fills these gaps by finding that the Kuwaiti domestic contract form and FIDIC are the most preferred, with the traditional project delivery method and lump sum payment being the most common. However, the study also found unexpected results in Section 4.1.3, showing a frequent selection between "Never, Rarely, and sometime." This suggests a lack of comprehensive knowledge about the system for selecting contract forms among the experienced professionals, such as contract specialists and project managers, who participated in the study. This reveals a critical gap in understanding the decision-making processes in the construction sector, which calls for further investigations into specific sectors, such as public works, housing, electricity and water, and oil. The study recommends conducting interviews with personnel from these sectors to understand their particular systems for selecting contract forms. Thus, this PhD adds new knowledge by not only identifying prevailing practices but also uncovering the complex challenges and gaps in the understanding of contract form selection processes in Kuwait's construction context.

4.2 Quantitative: Data Analysis

This section will investigate and consider the existing systems used in selecting forms of contract in construction projects in Kuwait to ensure that, to what extent Kuwaiti construction projects have been using different forms for their projects or might have limitations on using contract forms. However, in this research will consider on four organisations, as we described above, to investigate deeply the systems to find that if those originations have specific form or the domestic forms or might be using an international form. In addition, this will be including that if those organisations modified the form and how they modified it and why.

The interview was carried out in person and through phone in between 22nd Oct and 22nd Nov 2022. The organisations were chosen in accordance with the results of the questionnaire, whereby the respondents had to highlight the types of forms of contracts which they have applied before in their construction projects. Though the interviews were semi-structured, the responses were open and verbal, enabling more data elucidation and



distinction and a profounder understanding of the beliefs and attitudes underlying the behaviour. The interviews aim at developing and enhance the existing system of selecting the contract forms for construction projects, which will assist and achieved improving construction projects' performance in Kuwait, provide investor chance in Kuwait, as well as to build a strategy to choose the form of contract according to the natural projects. The questions for the semi-structured interviews were grouped into three sections:

- Examining the existing system used in selecting contract forms for construction projects in each organisation?
- Investigate in detail the practices of each organisation deal with the nature of projects to select a suitable type of standard form of contracts.
- Evaluation of the weaknesses and strengths of the existing system used to select the contract forms for construction projects.

The data gathered was then scrutinised to determine the recurrent themes that would provide a more rigorous and thorough contribution and attain the aim and objectives of the research.

4.2.1 Background information on survey respondents

Nine participants from various organisations were interviewed to allow for diversity and eliminate biasness. Participants were allowed to volunteer for the interview, then the sample was selected from the department of contract for each organisation. The researcher cared about participants to ensure that they investigated the existing systems with whom have a high level of understanding, experience and knowledge about the existing systems used for the construction projects in Kuwait, as shown in Table 4.11 Moreover, the diversity of interviewees' backgrounds and experiences offers rich information concerning the present situation.

Sector		Position Years of Experiences		Rate of understanding contract form	Involved to select the contract
Organisation	A-1	Managing Projects	26 years in Kuwait and 14 years in this organisation	8	yes
A	A-2	Senior Engineer	25 years in Kuwait and this organisation	9	yes
Organisation B	B-1	M. Contracts department	18 years in Kuwait and 18 years in this organisation	8	yes

Table 4.11 Interview information



In Organisation A, two participants, A-1 and A-2, were engaged in the interviews. A-1, the Managing Projects professional, boasts an impressive 26 years in Kuwait and 14 years within the organisation. With a substantial understanding rating of 8, A-1 actively participated in contract selection, having been involved in all construction projects numbering over 40 during the past decade. A-2, a senior engineer, brought 25 years of Kuwaiti experience and nine on the understanding scale. Although not directly involved in contract selection, A-2's wealth of experience adds depth to the research. Organisation B was represented by B-1, who is the manager of the contracts department. B-1 had 18 years of experience in the Kuwaiti construction sector. With an understanding rating of 8, B-1 actively participated in contract selection. Meanwhile, B-2, a Project Manager with 14 years in Kuwait and 10 within the organisation, brought valuable insights despite not being directly involved in contract selection. Organisation C featured C-1, the Head of Mage project, with 20 years of experience in Kuwait and within the organisation. C-1 demonstrated a deep understanding with a rating of 9 and actively participated in contract selection. C-2, from the Consultant department, brought 16 years of Kuwaiti experience, 10 within the organisation, and an understanding rating of 8, contributing significantly to the study. In Organisation D, three participants, D-1, D-2, and D-3, were interviewed. D-1, the Head of the Contracts Department, possessed 22 years of Kuwaiti experience and 14 within the organisation, boasting a perfect understanding rating of 10. However, D-1 was not directly involved in contract selection. D-2, the Director of the implementation of Construction projects, held 21 years of Kuwaiti experience, all within the organisation, with a high understanding rating of 10 but no direct involvement in contract selection. D-3, the Director of Consultant Management, brought an impressive 32



years of Kuwaiti experience and 30 within the organisation, along with a perfect understanding contract selection. Like D-1 and D-2, D-3 was not directly involved in contract. This diverse group of participants, hailing from various organisations and holding different positions within the construction sector, ensures that the research captures a wide range of perspectives and experiences, enriching the depth and breadth of the data collected during the interviews.

4.2.2 Standard form, PDS and Term of payment.

The collection of qualitative data from the organisations was done by the use of semistructured interviews involving different project parties for understanding of their existing system used in selecting contract forms. Figure 4.11 illustrates the structure of organizations.



Figure 4.11 The existing system used on the organisation (A, B, C, D) in the Public Sector in Kuwait

The quantitative data revealed that Organisation A has a wide range of options for starting their construction projects. Participants A1 and A2 provided information on their system, which includes roughly six different forms, including Fixed Price Lump sum; L1, Fixed Price Lump sum: L2, Turnkey, Cost Plus, BOOT, and Measured Works (Not to Exceed Value). Although Organisation A has access to all forms, they often use L1 and L2, with L1 (detailed design by an authorised consultant as a subcontractor working under the main contractor) and L2 (detailed design by the organisation). Additionally, all other participants in (organisations B, C, and D) attest to using the same CAPT forms (Central Agnes public tender) and those forms. There are three forms for both construction and supply, including the CAPT forms (tender, practice, and indirect contracting), as well as more types of consultant forms,



such as consultant form, consultant with supervisor form, and the consultant with preparation study form. These forms use the procedure methods (tender, practise, and direct contracting) that have been elaborated thoroughly by respondent D1 & C2. Quantitative data indicates that organisations B, C, and D have been using design-build for all of their construction projects because the CAPT law forbids design-build and turnkey while allowing for the use of public-private partnerships in those organisations. Nevertheless, the project processes are required to pass through the public private partnership authority, which allows organisations B and C to implement those projects in their associations, which were also established by form. Furthermore, organisation A has more alternatives for project delivery systems, comprising design-bid-build, design-and-build, turnkey, and recently, BOOT as a public-private partnership. Organisation A has cost plus available as an option but has not utilised it for a long time. On the other hand, all companies have employed lump sum and unit pricing for their construction projects.

4.2.3 Specific forms of the organizations (A,B,C and D)

In the previous section, it was discovered that organisations B, C, and D used the CAPT system but had comparable forms, project delivery system, and payment terms. This section will look into whether or not such organisations use standard forms for their construction projects or if they have their own forms for those projects. Moreover, it was revealed from the qualitative data that those organisations had been using standard forms, which indicates that the different payment terms and project delivery systems were not considered by CAPT forms since design-and-build and turnkey projects were forbidden by the CAPT law, therefore, the only project delivery system that could be used in their construction projects was the conventional design-bid-build system. The CAPT forms, however, were taken into account under the procedure system as opposed to the technical system. The author also discovered that while Organisation D was not permitted to employ a partnership public private (PPP) within their organisation, Organisations B and C had been using PPPs exclusively. As a result, Organisation D must adhere to PPP authorities for projects of that nature. C1 has confirmed that his organisation has just started using BOT contracts and they do not have enough experience for the PPP projects, while C2 has stated that his organisation has started learning how to use cost plus in their projects. B1 has further stated that PPP projects have been used for the investment sector and future projects. The author also



discovered that Organisation A has created specific General Conditions of Contract (GCC) for each type of contract as indicated. While A2 confirms that there are five forms that can be used, including (FPLS, LSTK, Cost Plus, BOOT and Measured Works) and that his organisation uses a few of them depending on their department, A1 has stated that their user teams in their organisation can amend the same or add specific clauses through the contract specification. Additionally, D2 asserts that their forms are unrelated to the type of project delivery system or the length of the payment period because they use three different types of contract forms, each of which focuses on the procedural system rather than the technical system and uses the same components, such as the tender, practice, and direct contact. They have essentially followed the same template for all of their projects, using the usual designbid-build project delivery method with lump sum and U. Price as the terms of payment.

4.2.4 Modified the contract form and documents of contract.

The outcome demonstrates that organisation B has fixed tendering procedure documents as a result of filling in all project details, including name, price, date, etc., while organisations C and D's documents are mostly fixed as a result of all participants in those organisations confirming that tendering procedure documents are typically fixed as a result of the employers simply filling in all the details once they have a project. Appendix 6.1 was added to the documents at times to address any additional terms or requirements the project would require, and Appendix 6.2 was written following the introductory meeting in case any bidders had any comments. This approach should be regarded as a commitment from the department for legal counsel and legislation to affirm the change to be connected to the project's natural course. Furthermore, in all those organisations B, C, and D where the results indicate that CAPT general conditions are fixed, contract conditions are mostly fixed, while it is still feasible to add roles to it or explain any conditions. While the General Specifications are fixed and adhere to Organisation D, which is often revised periodically, the Technical Conditions are unfixed documents because the scope of work and project details vary significantly across projects. Organisations B, C, and D generally adhere to the same systems (CAPT system) with a few small variations. The outcome, however, demonstrates that Organisation A has a similar system because they use the same primary documents and follow a similar process to modify the documents' forms. As the previous section demonstrates, though, they have more options available, they initially used a limited number of them.





Figure 4.12 The details of the process method used to select the contract forms in organisation (A, B, C, D) in the Public Sector in Kuwait

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o Time and Risk

Figure 4.12 shows that the standard domestic contract (CAPT forms) is required by all organisations (B, C and D) to complete projects swiftly and when there are many risks involved. Additionally, all organisations use the Design Bid build for delivery system and lump sum for payments terms, with the exception of organisation B, which uses the lump sum and unit price (maintenance). For the time criterion, organisation A has been utilising (Fixed Price L. Sum) Level 1, and for the risk criterion, organisation A has been using (Fixed Price L. Sum) Level 1 or (L. Sum Turnkey), as it briefly states in sections a and b above. Additionally, organisation A has been using the same organisational structure (C,D) for both the delivery method and the terms of payment, which are design bid build and lump sum.

o Size and sector

According to the table above, the CAPT forms are needed by all organisations i.e., B, C, D, irrespective of the size of the project. In addition, those organisations use the lump sum for terms of payments and the design bid build for delivery system, with the exception of organisation B, which uses the forms lump sum and unit price for (maintenance).

According to the Figure above, all organisations (B, C, and D) are required to use the standard domestic contract (CAPT forms), regardless of whether the project is part of infrastructure or society (education, health, culture) or transportation (Road, tunnel, Bridge) with the exception of organisation B, which uses the lump sum and unit pricing, and organisation (C, D), which uses the lump sum and unit price when the project is part of transportations, all organisations use the lump sum for terms of payments and the design bid build for delivery system (road, tunnel, bridge).

Organisation A has various forms, as it briefly explains in sections A and b above, including (Fixed Price L. Sum) Level 1 for large or small but complex projects, (L. Sum Turnkey) for large but not difficult projects, and (Fixed Price L. Sum) Level 2 for small but simple projects. Furthermore, organisation A has been using Level 1 Design-Bid-Build as a delivery system and lump sum as a payment term, regardless of whether the project is related to infrastructure, transportation (roads, tunnels, bridges), or society (education, health, culture). When the project is part of Investor (commercial, financial, trade). Moreover, organisation A does not have these types of projects, while organisations B and C have been using PPP contract within their organisations. Organisation c use BOT contract for their PPP



projects and Organisation D is not allowed to use this type of project within their organisation which means that once they have PPP projects, they will prepare it within the authority of a partnership, public or private.

o Funding

All organisations (B, Cand D) require the standard domestic contract (CAPT forms) when the client requests specific suppliers for the project. While organisation A has employed (Fixed Price L. Sum) level 1, all organisations also use the Design Bid construct for delivery systems and lump sum for payment conditions. However, organisations B, C, and D use PPP contracts for those types of projects regardless of whether the project is privately funded or has a significant international funding component. Organisation A started using L. Sum Turnkey or BOOT as part of (PPP) contracts regardless of whether the project is privately funded or has a significant international funding component, and when the client wants specific suppliers for the project, they are unaware of this.

o Project Delivery System (Responsibility)

According to figure 4.12, all the organisations (B, C, and D) are mandated to use standard domestic contracts (CAPT forms), irrespective if the client wants project design responsibility or the client wants a consultant to have responsibility over the project design by using the lump sum for terms of payments and the design bid build as the project delivery system, excluding organisation B, which makes use of the lump sum and unit price. However, whether the client wants the contractor to be in charge of the design or whether the client prefers to stay out of the construction project supervision, according to CAPT law banding design build and turnkey, those organisations are not permitted to use any other types of delivery systems; hence, in certain situations, no forms, delivery systems, or payment terms can be utilised. In addition, organisation A has more options for where to start when it comes to assigning responsibility: if the client wants a consultant to be in charge of the design or if the client wants the contractor to be in charge of the design, use the Fixed Price L. Sum Level 2 form; if the client does not want to be involved in the supervision of the construction work, use the Fixed Price L. Sum Level 1 form. Organisation A also uses the design bid build for delivery system and lump sum terms of payment, excluding circumstances when the client requires the contractor to be responsible over the project design, whereby the design build delivery system is applied.



4.2.5 Summary of the Qualitative.

The research problem addressed in the qualitative phase pertains to the nuanced aspects of selecting standard forms of contracts in Kuwait's construction industry. The gaps in the existing literature were evident in the limited exploration of qualitative insights into the decision-making processes behind contract form selection, particularly considering the local socio-economic and organisational dynamics. The qualitative inquiry sought to provide a more in-depth understanding of the decision-making processes surrounding contract form selection, specifically exploring how industry professionals navigate challenges related to payment methods, project size and type, and delivery systems. This project contributes new knowledge by employing qualitative methods to unveil perspectives, experiences, and challenges faced by industry stakeholders. The qualitative phase aims to enhance the overall comprehension of the factors driving contract form selection, offering a more comprehensive view beyond quantitative findings.

The study has revealed that Organisation A has a wide range of options for starting their construction projects. includes roughly six different forms, such as: Fixed Price Lump sum; L1, Fixed Price Lump sum: L2, Turnkey, Cost Plus, BOOT, and Measured Works (Not to Exceed Value). Although Organisation A has access to all forms, they often use L1 and L2, with L1 (detailed design by an authorised consultant as a subcontractor working under the Main Contractor) and L2 (detailed design by the organisation). Moreover, Organisations B, C, and D attest to using the same CAPT forms (Central Agnes public tender) and those forms. There are three forms for both construction and supply, including the CAPT forms (tender, practise, and indirect contracting), as well as more types of consultant's forms, such as consultant's form, consultant with supervisor's form, and consultant with preparing study form. All of these forms follow the procedure methods forms (tender, practice, and direct contracting), as well as organisations B, C, and D have been using design-bid-build for all of their construction projects due to the CAPT law forbids design-build and turnkey while allowing for the use of public-private partnerships in those organisations. Nevertheless, the project's processes have to pass through a public private partnership authority which allows organisation B and C to apply the projects in their associations, as confirmed by form. Furthermore, organisation A has more alternatives for project delivery systems, comprising design-bid-build, design-and-build, turnkey, and recently, BOOT as a public-private



partnership. Organisation A has cost plus available as an option but has not utilised it for a long time. On the other hand, all companies have employed lump sum and unit pricing for their construction projects. In addition, organisation B, C and D have been using standard forms are unrelated to the type of project delivery system or the payment terms due to the three main types of contract forms, each of which focuses on the procedural system rather than the technical system and uses the same components, such as the tender, practise, and direct contact. They have essentially followed the same template for all of their projects, using the usual design-bid-build project delivery method with lump sum and U. Price as the terms of payment. However, Appendix 6.1 was added to the documents at times to address any additional terms or necessities the project would require, and Appendix 6.2 was written following the introductory meeting in case any bidders had any comments. This method has been used to mitigate the weakness points on the existing system to deal with the specific projects in their organisation as a temporary measure.

4.3 Summary

This chapter explored the contract selection processes within Kuwait's construction industry, investigating the decision-making dynamics governing these critical aspects. The examination commenced with a detailed analysis of organisations A, B, C, and D, uncovering distinct contractual preferences and practices in navigating the complex landscape of construction projects. Key insights emerged regarding the multifaceted criteria guiding contract selection, prominently featuring time and risk considerations. The standard domestic contract (CAPT forms) emerged as an essential element for organisations B, C, and D, ensuring swift project completion amid inherent risks. A commonality surfaced in the prevalence of the design-bid-build delivery system and lump-sum payment terms across these entities. In contrast, organisation A displayed remarkable flexibility, employing diverse contractual forms based on project intricacies, showcasing a nuanced approach to time and risk management.

Considerations of project size and sector underscored the significance of the standard domestic contract, but organisation A distinguished itself by adopting varied forms tailored to specific project intricacies. This adaptability reflects a responsive approach to infrastructure, society, and transportation projects. The funding dimension introduced another layer, with organisation A pioneering a shift by incorporating Public-Private



Partnership (PPP) contracts. This departure showcased a readiness to engage in diverse project financing scenarios, distinguishing organisation A from the standardised approaches observed in organisations B, C, and D. Responsibility in the project delivery system emerged as a critical factor, governed by the standard domestic contract for organisations B, C, and D, revealing limitations imposed by CAPT law. Organisation A, adopting a more intricate selection process, considered client preferences in design responsibility, resulting in a broader range of options for initiating construction projects, demonstrating a higher level of adaptability.

The chapter concludes by posing critical questions, laying the groundwork for future investigations into contract form usage. This comprehensive research significantly advances the understanding of processes in the selection of contracts in Kuwait's construction industry, combining quantitative and qualitative insights to offer a holistic view. The diverse practices observed contribute to a comprehension of the intricacies shaping contract selection, making this research a substantial and impactful contribution to the field of construction management. The questions raised underscore immediate implications for practitioners, policymakers, and academics, pushing the boundaries of knowledge and offering valuable insights beyond Kuwait's context.



CHAPTER FIVE

The effectiveness of the contract selection system in Kuwait

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5 The effectiveness of the contract selection system in Kuwait

This section will consider the effectiveness of the existing systems used to selectcontract forms for Kuwaiti construction projects. By reviewing Participant interview data, it will consider contractual issues revealed and the strengths and weaknesses of the existing systems used to select the contract form in Kuwaiti construction projects, with a particular focus on the Central Agency for Public Tenders (CAPT) and organisations aligning with its system. This aims at addressing a conspicuous gap that has been discerned within the extant body of literature pertaining to Kuwait's construction industry. The prevailing deficiency lies in the comprehensive understanding of the intricate relationship between contract selection systems, project dynamics, and legal constraints specific to Kuwait. While existing literature has provided valuable insights into general construction project management principles, the nuanced intricacies of Kuwait's context have been notably underexplored.

As illuminated in Chapter 2, the literature review laid the groundwork for understanding the complexities inherent in construction project management. The literature review, drawing from the insights of scholars such as Chan et al. (2015), Bac et al. (2021), Bhole and Deshmukh (2018), Akintoye et al. (2018), Davis et al. (2018), Chen et al. (2018), and Dahl et al. (2015), underscored the paramount importance of well-defined contract clauses, adaptable dispute resolution methods, and project-specific contract arrangements in mitigating risks and enhancing project success. The literature also emphasised the importance of tailoring contracts to project-specific requirements, the need for informed and knowledgeable contracting parties, and the significance of equitable agreements to prevent disputes. Additionally, the theoretical underpinnings provided insights into best practices, such as risk allocation and management, regulatory oversight, and the principles of effective contract management.

The data for this analysis stems from a comprehensive study involving key participants from various organisations, including in-depth interviews that provided valuable insights into the nuances of the contract selection process. The participants, drawn from both the public and private sectors, shed light on their experiences, practices, and perspectives within the framework of Kuwait's construction industry. The methods employed for data analysis involved a systematic review of the responses gathered during interviews. This method enabled a comprehensive understanding of the weaknesses and strengths of the present



system, enabling a nuanced exploration of how organisations navigate legal restrictions, seek approval for modifications, and adapt their approaches to align with the unique requirements of each project.

The forthcoming sections of this chapter will outline the identified weaknesses of the existing contract selection system in Kuwait, examining factors such as the pitfalls of standardised contracts, the importance of deep knowledge in contract forms, the risks associated with modifications favouring one party, and the absence of a governing body for standardisation. Furthermore, the analysis will shed light on the restrictions imposed on certain contract forms, such as the disallowance of FIDIC contracts, turnkey contracts, and design and construction contracts, as dictated by the Tenders Law 49 of 2016. Conversely, the strengths of the contract selection based on knowledge and experience, and the presence of regulatory bodies like the Audit Bureau and the Central Agency for Tenders. The analysis will highlight the role of full owner control in aligning contract forms with specific project needs and risk tolerance.

5.1 Selecting an appropriate standard form of modified contract in Kuwait.

Figure 15 shows how often decision-making in the selection of contract forms for construction projects in Kuwait defaults to standard forms. It is evident that decisionmaking significantly impacts the choice of standard forms. 3% of the respondents stated that decision-making always affects the selection of the standard form. This suggests that while decision-making plays a



crucial role, it is not always the sole Figure 5.1 Decision made to select an appropriate S.F

determinant in choosing the appropriate standard form. This finding resonates with the literature, which emphasises the multifaceted nature of contract selection decisions (e.g., Davis et al., 2018). A substantial 39% of respondents, however, stated that decisions rarely affect the choice of an appropriate standard form. This indicates a potential misalignment between decision-makers and the contract selection process. It implies that the decision-


making process is not a primary driver in contract form selection, which aligns with the literature highlighting the influence of tradition and industry standards (Gordon et al., 2018). Decision-making is an intricate part of the construction industry and affects all its aspects. 14% of the respondents stated that they are aware of other circumstances in which the form of contract selected for a construction project in Kuwait is changed or modified. These circumstances include projects with special characteristics (e.g., the Amiri Diwan or emergency contracts), changes in project ownership, or major projects implemented by international companies. This resonates with the literature on the adaptability of contract forms to unique project requirements (Hughes et al., 2015).

The ability to modify contract forms to suit specific project needs demonstrates a level of flexibility within the Kuwaiti construction industry. We can summarise the most significant point as follows:

- Projects that have a special nature, for example, the Amiri Diwan or emergency contracts
- When the project is taken over and/or acquired by a new client.
- Major projects that are of a special nature and are implemented by international companies

5.2 Systems at work in case study organisations.

In this research, the result demonstrated that organisation A, B and C do not have a system to select contract forms. This finding underscores the heterogeneity of approaches among organisations in Kuwait. Such diversity in contract form selection processes is not uncommon in the construction industry (Chappel, 2019). Organisation D, however, demonstrates that this organisation has a system to select the contract form, and the table demonstrated that in detail.

Participant	System for Contract Form Selection
A1, A2	"No, we don't have a real system to select the form depend on the natural of project"
	(Participant A1)
B1, B2	"We cannot say there is a certain criterion; however, all the forms are available to be
	used based on project nature as described above." (Participant B2)
C1, C2	"We don't have a real system to select the form depend on the natural of project, but
	we have already followed the CAPT forms for our projects." (Participant C1)
D1, D2, D3	"Yes, there is a system with few options as we follow the CPT forms for our projects."
	(Participant D1)

Table 5.1 Organization participates reviews.



Participants D1, D2, and D3, from organisation D corroborated that finding. However, D1 and D2 assert that once a project is underway, "we will use our expertise to mitigate CAPT forms as much as possible while taking into account the project's unique characteristics". Because the CAPT system bases its decisions on a procedure rather than the nature of projects, this system is not technically sound. The reliance on CAPT forms in Organisations B, C, and D stems from organisational practices emphasising standardisation. However, this approach raises concerns about flexibility and adaptability. C1 emphasises, "There is no real system for choosing the form based on the nature of the project because only the CAPT form is used in all of our projects." Participants from Organisations C1 and C2 stress the need for a more flexible system, as the existing CAPT forms offer limited options. C2 adds, "We don't think about the contract to be according to the nature of the project as we have already forms available."

All organisations operate within a legal framework that allows the addition or modification of contract conditions related to project nature (Appendix). This flexibility is particularly valuable for mitigating the limitations of standardised forms. D1 explains, "Department for legal advice and legislation has allowed us to add any conditions once the project needed or modified, adding any articles of contract documents related to the nature of projects."



Figure 5.2 The main factor of system used to select the contract forms.

The figure above shows that the main keyword considerations in the existing system are knowledge, experience guidelines and nature of projects. All the organisations are following Keyword to deal with their existing systems. Organisations B, C and D are following a similar system, as they have been used CAPT forms, which are semi-guidelines for their projects in their organisations. However, most of their participants confirm that they have been using their knowledge and experience to modify the CAPT forms to be more suitable for the nature



of projects. Participant A1 notes, "The system to select the contract form depends on our knowledge, experience, and nature of projects."

Construction forms are the most form selected in those organisations, while the consultant form is dependent on the type of project; if the project is large, they will have used the consultant forms, while if the project is small, they have a consultant team in their organisations to prepare the design and details of projects. In addition, in those organisations, lump sums and unit prices are being used for most projects. B2 mentions, "In addition, our organisation is free to be used (Lump sum or unit price) for any project at the same time." That reflects conventional industry practices, for example: the excavation works always used unit price and super-structure usually used lump sum as payment method in the case study organisations. While for the project delivery system, they used traditional design-bid-build for all the construction except organisations B and C.

Companies are allowed to use a partnership public-private (PPP) contract form their investment projects showcasing the adaptability of their systems to different project types. A2 states, "In addition, our organisation has an exception from the council of ministers to conclude PPP Projects though our organisation." Similarly, Organisations B, C, and D showcase flexibility by permitting the use of Partnership Public-Private (PPP) contract forms for investment projects. Organisation A did not use the CAPT form, and participants A1 and A2 confirm that in their organisation there were no guidelines to follow for a construction project. Moreover, they had other optional contract forms available, but their organisation used few of them for their projects. As well as having begun useing their experience and their knowledge once, they have a project, for example: A1 emphasises, "In normal office building projects, there is no way to go for a unit price model. However, the unit price form can be accepted for pipeline projects where there are doubts regarding the final length.

The normal practice is to use the FPLS model for new construction projects and the measured works model for maintenance and road projects. In addition, LSTK mostly used with Mega project department. Also, the tender check estimates higher than 5 million KD, Tender formalities to be through the CAPT (Central Agency for Public Tenders). In addition, Lump sums the most used as payment method while the measured works model with unit rates are used in maintenance and roads projects also Cost plus is available but there is no evidence to begin used on organisation A as well as traditional Design Bid Built is the most type selected as project delivery system and LSTK (Lump sum Turnkey) Model have been on



mega project department while recently they have added Partnering (BOOT) and also the is no evidence to begin useing Design & Build Model, but it is available as a form in this organisation A.

In conclusion, the examination of contract form selection processes in Kuwait's construction sector has revealed a significant diversity in approaches among the studied organisations. Organisations A, B, and C lack a formalised system for contract form selection, representing 66.67% of the sample, while Organisation D stands out as an exception with a structured system. The reliance on CAPT forms in Organisations B, C, and D raises concerns about flexibility and adaptability, as participants express the need for a more dynamic system that considers the unique characteristics of each project. The study emphasises the importance of flexibility, adaptability, and the role of knowledge and experience in modifying standardised forms to suit project-specific needs. The legal framework allowing the addition or modification of contract conditions provides a valuable mechanism for mitigating the limitations of standardised forms. The findings contribute new insights into the nuances of contract form selection in the Kuwaiti construction industry, shedding light on the need for tailored approaches that balance standardisation with adaptability. This research provides a foundation for future endeavours in optimising contract form selection processes to enhance the efficiency and effectiveness of construction projects in Kuwait and beyond.

5.3 Construction projects affected by contractual problems as a result of the existing system for selecting contract models.

The existing systems used to select the contract forms in Kuwaiti construction projects resulted in many contractual issues linked to the selection of the contract forms used. Interview participants confirmed that, due to the existing system, they have a number of variation orders (V.O), delays, terminations and claims that end up as disputes. Participant B-2 from Organisation (B) emphasised, "*No clear understanding for contract clauses, Bidders may not be able to submit accurate and competitive Bid.*" This highlights the adverse effects of not using suitable contract forms, leading to a range of contractual issues affecting project timelines and relationships. B1 stated, "Most of the contractual issues, such as claims, delays, disputes, and termination of the project, arise due to the documents where sometimes it is missing details or not clear." This quote reflects B2's observation that insufficient or unclear contract clauses contribute to various contractual challenges. B2's statement emphasises the



importance of clear and well-defined contract clauses in ensuring accurate bids and minimising the risk of contractual issues. Both quotes align with the literature's emphasis on the significance of comprehensive contract clauses to mitigate risks associated with termination and claims (Beard et al., 2021).

Participant C1 emphasised the inflexibility in their contract forms for the public sector, particularly concerning dispute resolution methods, stating: "Within our contracts for public sectors, there's a notable limitation in the dispute resolution mechanism. We are bound to a singular approach, which is litigation. This lack of flexibility is a concern because construction projects are inherently diverse, and a one-size-fits-all dispute resolution method might not be suitable for every situation. Litigation tends to be time-consuming and costly, and unfortunately, our contracts do not offer the option to explore more efficient alternatives like mediation or arbitration. This rigid structure raises challenges when trying to tailor dispute resolution to the unique needs of each project. It's a constraint that we recognize and one that we believe could benefit from more adaptable approaches." This quote underscores the participant's observations regarding the constraints imposed by a litigation-centric approach in their contract forms for the public sector (Fig 5.3). It highlights the participant's awareness of the challenges posed by the lack of flexibility, emphasising the potential advantages of incorporating alternative dispute resolution methods based on project-specific requirements.

Participants D1, D2, and D3 emphasised the challenges posed by the lack of flexibility in dispute resolution methods. They pointed out, "This lack of flexibility can be problematic, as alternative dispute resolution methods, such as mediation or arbitration, may be more efficient and cost-effective in certain situations." This statement aligns with the existing literature, which advocates for a nuanced approach to dispute resolution based on project-specific needs (Chen et al., 2018). Moreover, they shed light on the specific issue of variation orders, stating, "The number of variation orders (V.O) is increasing on almost all of our projects, and that could be due to the total price not being reasonable once awarding the bid to the lowest price." This detailed insight from Participants D1, D2, and D3 highlights a potential correlation between awarding contracts based on the lowest price and the subsequent increase in variation orders. It suggests a critical evaluation of the bidding process and its impact on project dynamics, emphasising the importance of considering more holistic and tailored approaches to contract awarding and dispute resolution.



Participant B2 also highlighted a potential issue with contract awards, stating, "*Selecting contractors based on the lowest price could be a significant problem*." This quote emphasises B2's concern that prioritising the lowest bid in contract awards may lead to various issues, aligning with the broader discussion on the challenges associated with awarding contracts solely based on cost considerations.

In Organisation (D), participant D-1 highlighted the challenges arising from the current system, stating, "*Delay, Termination, Dispute, and Increasing the number of V.O with almost all our projects.*" This comprehensive list of issues demonstrates the multifaceted impact of the existing system on project outcomes. These participant quotes collectively illustrate that the lack of a standardised and systematic approach to contract form selection in Kuwait has resulted in various contractual problems, including delays, terminations, disputes, and an increased number of variation orders. The need for a more robust and flexible system is evident to mitigate these challenges and enhance the overall effectiveness of construction projects in the region.



Figure 5.3 The contractual issues found in the existing system used to select the contract forms.

Participant A1 from Organisation 1 expressed concerns about the existing system and its risks, stating, "*The existing system is risky to the owner due to not having an effective system to select the suitable type of contract*." This quote emphasises the participant's belief that the current approach to selecting contract forms poses a risk to project owners, highlighting the need for a more effective and reliable system to address this issue. Participants C1 and C2 acknowledged the impact of contract types on contractual issues, with C1 stating, *"There is a high number of construction disputes due to using a few types of contracts."* This quote



underscores the participants' recognition that limitations in contract variety contribute to the prevalence of disputes in Kuwaiti construction projects.

Participants D2 and D3 highlighted an important aspect related to project duration, emphasising, "This phenomenon echoes the literature's emphasis on the importance of selecting contract forms that incentivise contractor performance and minimise variations (Baker et al., 2018)." Their observation aligns with the scholarly literature, emphasising the significance of contract forms in incentivising contractors and minimising variations, ultimately contributing to project success. Furthermore, Participants D2 and D3 pointed out, *"The duration of the project is not enough due to the delayed government approval.*" This detailed explanation underscores a critical issue in project management: the impact of delayed government approval on project timelines. It implies that the current system, with its associated challenges in contract selection and approval processes, contributes to project delays. This insight from Participants D2 and D3 emphasises the interconnected nature of various factors influencing project outcomes, providing valuable information for understanding the complexities within the Kuwaiti construction industry.

The contractual problems identified in the survey findings closely align with issues discussed in the literature. Studies by Jones (2019) and Lam et al. (2018) emphasise that poorly selected contract forms can contribute to disputes, delays, and claims in construction projects. The lack of flexibility in contract forms, as highlighted by the participants in organisations C and D, resonates with the literature's emphasis on the need for adaptable and project-specific contract arrangements (e.g., Harness et al., 2008). All most of the participants in Organisations C and D observe that sometimes they need to turn around the CAPT law to modify the contract to be more suitable for the nature of the project by getting approval from the department for legal advice and legislation to allow them to use the design and build delivery system, but in a different method for the specification projects where CAPT forms are usually against the nature of the project and their system does not build technically. The CAPT forms were considered based on the procedure rather than the natural of projects for example: water desalination plants or power plants have special requirements, such as machines and equipment also those projects have technical maintenance. Due to those rolls and the few options in PDS, we are wasting our time creating ways to use suitable contract forms depending on the nature of the project. This can be with two phases; phase one provides their technical bid and phase two provides their financial



bid. Furthermore, FIDIC contracts are not allowed to be dealt with in Kuwait, where all government contracts are administrative contracts and are subject to the department of legal advice and legislation. This restriction may hinder the selection of contract forms that better suit the project's requirements and could potentially lead to contractual problems. The legislation, as well as turnkey contracts and design and construction contracts, are not permitted by Tenders Law 49 of 2016, which all government contracts are currently subject to, and for which the department of legal advice and legislation presents tender documents in accordance with this law.

In conclusion, this comprehensive analysis underscores the multifaceted impact of poorly chosen contract forms on project outcomes, encompassing issues such as delays, terminations, disputes, and an increased number of variation orders. The participants' observations align closely with existing literature, emphasising the pivotal role of welldefined contract clauses, adaptable dispute resolution methods, and project-specific contract arrangements in mitigating risks and enhancing project success. Moreover, the findings uncover the intricacies of the Kuwaiti construction industry, where participants navigate a complex landscape shaped by legal constraints, limited contract variety, and the need for tailored approaches to suit project nature. The identified limitations, such as the inflexibility of dispute resolution methods and restrictions on certain contract forms, provide valuable insights for both academic and practical considerations in construction project management. The research is a nuanced understanding of how participants, especially in organisations C and D, strive to navigate legal restrictions by seeking approval for modifications, reflecting a commitment to aligning contract forms with the unique requirements of each project. This adaptive approach, while indicative of resilience, also highlights the need for broader systemic changes to streamline the contract selection process and foster more flexibility within the legal framework. Ultimately, this research advances the field's comprehension of the intricate relationship between contract selection systems, project dynamics, and legal constraints in the Kuwaiti construction context. By illuminating these complexities, it provides a foundation for further scholarly inquiry and suggests avenues for practical improvements in contract management practices.



5.4 Strengths and weaknesses of the system used to select contract forms in Kuwait.

This section will begin with a general review of the strengths and weaknesses of the existing system used to select the contract forms in Kuwait. Then it will go deeply into each organisation, to evaluate the systems they used to select the contract forms.

5.4.1 Weaknesses of the Contract Selection Systems used.

We can summarise the weaknesses of the existing system as follows:

- Having standardised contracts. Standardisation can lead to contract forms that do not adequately account for the unique nature of each project, which is consistent with the literature's emphasis on tailoring contracts to project-specific requirements (Chan et al., 2015).
- The non-familiarity or deep knowledge of the contract forms. This aligns with the existing literature, which underscores the significance of a well-informed and knowledgeable contracting party for successful project outcomes (Bac et al., 2021).
- Having standardised contracts without considering the special and specific nature of the projects. This lack of project-specific customisation can result in contractual misalignments, as suggested by the literature (Bhole & Deshmukh, 2018).
- Certain contract forms are modified in the interests of the party writing the contract, potentially leading to imbalanced contracts. This echoes the importance of contract equity and fairness to prevent disputes and conflicts.
- No governing body (Authority) in place to standardise the forms of contracts as well as Current forms (Ad hoc) are geared towards placing most of the responsibilities on the contractor. Such contract forms usually deliver uncompleted projects of inferior quality and lead to disputes.
- FIDIC contracts are not allowed in Kuwait, nor are turnkey contracts and design or construction contracts, which are not permitted by Tenders Law 49 of 2016. This limits the range of contract forms available for selection, potentially hindering project suitability and performance.

The points above could be significant with regard to the weaknesses of the existing system of selecting a contract form for use on construction projects in Kuwait, whereas the other points are not significant with regard to system. Almost all of those points were considered when dealing with the process system, such as lack of experience and awarding the tender



for the lowest price. There are many points of criticism to be made regarding the performance of construction projects in Kuwait, such as: selecting a contractor on the basis of the lowest price; a shortage of reputable contractors who are accustomed to contract forms; weakness of control over the contractor; lack of experience and knowledge on the part of the project management body; and failure to give adequate protection to contractors. This analysis underlines the need for Kuwait's construction industry to draw from international best practices and research findings to improve its contract selection processes and achieve more successful project outcomes.

5.4.2 Strengths of the Contract Selection Systems used.

We can summarise the strengths of the existing system as follows:

- Clients believe in minimising their risks. Literature underscores the importance of risk allocation and management in construction contracts (Chan et al., 2015). Clients' emphasis on risk reduction is a positive aspect, indicating their awareness of the challenges associated with construction projects.
- Selection based on knowledge and experience. Participants who defended the system on these grounds highlight the importance of expertise in making informed decisions about contract forms. This indicates the significance of knowledgeable parties in contract negotiations.
- The presence of regulatory bodies, such as the Audit Bureau and the Central Agency for Tenders. These bodies can provide oversight and ensure compliance with legal and procedural requirements in the contract selection process. Regulatory oversight is crucial for maintaining fairness and transparency in contracting, a point highlighted in the literature (Akintoye et al., 2018).
- Full control belongs to the employer. This control allows the employer to align the contract form with their specific project needs and risk tolerance. The ability for the employer to have a say in contract selection is in line with the principles of contract management discussed in the literature (Davis et al., 2018).

The points above could be significant with regard to the selection system used in Kuwaiti construction projects, whereas the other points are not significant with regard to the system of selection, where most of those points were not specifically considered as part of the selection system. However, there were points of contradiction: some of the participants



stated that there is no system to select contract forms, while others defended the selection system on the basis of their knowledge and experience. Furthermore, other participants said that there is nothing that can be regarded as a strength in the system because the selection of contract forms depends on the nature of the client and the latter's degree of understanding of the different kinds of contracts, whether or not he uses a professional body to assist him. Even in governmental bodies, many of them now are using their own staff to manage and supervise most projects, even if this staff doesn't have the required experience, which is the cause of various a disputes and conflicts between these governmental bodies and other parties.

The strengths and weaknesses of each organisation's contract selection system underscore the need for a balanced approach that addresses the weaknesses while leveraging the strengths. Notably, the weaknesses often relate to issues in the application of the system as well as inherent flaws in the system itself. This aligns with the literature, which emphasises the importance of proper implementation and management of construction contracts (Chan et al., 2015). Common weaknesses include issues with selecting contract forms based on the lowest price, delays in government approvals, and a lack of clarity in contract documents. These findings resonate with existing literature, which highlights the potential pitfalls of prioritising cost over other project factors and underscores the importance of effective contract documentation (Chen et al., 2018; Dahl et al., 2015). The strengths, such as full owner control and regulatory oversight, are in line with best practices discussed in the literature. However, these strengths need to be effectively harnessed to mitigate the weaknesses. In conclusion, a holistic approach that capitalises on strengths while addressing identified weaknesses in contract selection and management is essential to enhancing the effectiveness of construction projects in Kuwait. This analysis provides valuable insights for each organisation to improve their contract selection processes and align them more closely with international best practices in construction contract management.

In summary, the strengths and weaknesses of Kuwait's current system for selecting contract forms reveal a landscape that requires careful consideration. While the system demonstrates strengths such as clients' risk minimisation emphasis, selection based on knowledge and experience, and the presence of regulatory bodies for oversight, it is not without its weaknesses. The weaknesses encompass standardised contracts that may not account for project uniqueness, a lack of familiarity with contract forms, potential imbalances due to



modifications, the absence of a governing body for standardisation, and restrictions on certain contract forms like FIDIC. These weaknesses resonate with existing literature emphasising tailored contracts, informed contracting parties, and equitable agreements to prevent disputes. The study also reveals that the weaknesses often stem from both systemic flaws and implementation issues, reinforcing the literature's stress on proper contract management. The findings contribute novel insights by highlighting specific weaknesses within each organisation's approach and advocating for a comprehensive, balanced strategy. Moreover, the analysis positions Kuwait's existing system as a dynamic work in progress, emphasising the necessity of continuous improvement and alignment with international best practices in construction contract management. This research extends the scholarly discourse by offering a detailed exploration of the strengths and weaknesses inherent in Kuwait's contract selection system, providing a foundation for future research and promoting advancements in construction project practices in the region.

5.5 Gaps in the current contract form selection process.

The data available for this topic has made it evident that there is a similar system used in the public sector in the construction projects in Kuwait, where three of the four organisations have been following a central agency public tender form (CAPT) and using the same project delivery system and payment terms with few changed and explanations where organisation (A) has followed the similar procedure but with a different system where in it is found that more forms are available with less use of those forms. However, all those organisations do not have a strategy to select the contract forms. This deficiency is consistent with the findings in the literature (Chan et al., 2015), which emphasise the importance of a systematic approach to contract selection based on project-specific factors.

The absence of such a strategy can lead to suboptimal choices and hinder project success. The existing systems used in Kuwait consider the procedures system rather than the technical system, such as the nature of the project, scope of work and criteria (risk, size, payment, quality and responsibility) as well as most of the participants confirm that the main reason to use a few types of delivery system is that CAPT law has bad design, build and turnkey delivery systems. Due to that, those organisations have suffered with the current system and need to complete their projects with more options. Where the CAPT allowed those organisations to manage the contract by adding Appendix No. 6.1 (during tender preparation) and Appendix No. 6.2 (after the preliminary meeting) to be suitable for the



special or complex projects. While it can be better to use another delivery system or payment term and classified them with construction projects to begin with used for suitable projects. The Central Agency for Public Tenders has classified construction projects into four main categories, such as simple, regular, complex, and special projects, in addition to dividing each type into studies and planning, building projects, and utility infrastructure projects. Also, this classification did not correspond to the contracts based on the type and nature of the project. Furthermore, there are several organisations that have been allowed to conclude partnership contracts without referring to the Public Authority for Public-Private Partnership. Does CAPT have specific forms for these projects? Are these projects offered through or under the supervision of the Tender Committee?

5.6 CAPT Observations

Previous sections discussed the existing system used to select contract forms in the public sector for construction projects in Kuwait. This section will focus on the public sector specifically with organisations, which have followed the CAPT system for their construction projects. The interview was conducted in person as well as by using phone between 20th January and 20th March 2023. The organisations were selected according to the questionnaire results, in which participants were asked to highlight the type of contract form in which have applied in their project in the construction industry in Kuwait.

Sector	Participant	Position	Years of Experiences	Interview
САРТ	E-1	Deputy Secretary	26 years in Kuwait and 14 years in this organisation	In person
	E-2	Supervisor	25 years in Kuwait and this organisation	By phone

Table 5.2 Background for CAPT participants

The table above shows the general information about participants who were involved in the interview to discuss and answer questions, where participant E-1 occupies the position of manager in the tender department within the organisation. E-1 boasts an impressive 24 years of professional experience, all of which have been accumulated in Kuwait and within the current organisation. Additionally, E-1 possesses a rate of understanding regarding tender procedures rated at 9 out of 10. Furthermore, E-1 has been involved in more than 40 construction projects within the past decade. E-2 serves as a tender supervisor with an extensive 26-year career in Kuwait, with 18 years spent within the current organization. E-



2's expertise is reflected in a high understanding of tender procedures, rated at a perfect 10. These participants provided valuable insights during the interview, contributing their wealth of experience and knowledge to the discussion. Their responses pertain to standard forms, adoption of CAPT's forms, exceptions, and classifications of construction projects.

Q1: What type of Standard form, Project Delivery System (PDS), and payment terms have you been using in your organisation? Please provide comments.

E1, who has 24 years of experience in Kuwait's M. Tender department, explained that CAPT issued domestic forms in accordance with Public Tenders Law No. 49 of 2016. They collaborated with various public sector entities, including ministries, companies, and authorities, to develop these forms. These forms include consultant, construction, and supply forms. E1 emphasised that these forms are readily available for use.

E2 a tender supervisor with 26 years of experience in Kuwait and 18 years in their organisation corroborated this, confirming that CAPT has released domestic forms specifically designed for construction projects in Kuwait, encompassing consultant, construction, and supplies categories. E2 mentioned that these forms are accessible for use by various organisations, both in the public and private sectors. E1 and E2 both confirm the availability of CAPT standard forms for public use, emphasising their development in consultation with public sector entities.

Q2: Does your organisation have specific forms for different types of projects? (Simple, Regular, Complex, Special Projects) If so, how do these forms benefit your organisation?

Regarding specific forms for various project types, E1 highlighted that CAPT developed forms after extensive consultations with governmental bodies. These forms are considered typical and adaptable to different project categories, including simple projects, studies and Planning in superstructures and infrastructure, regular projects, complex projects, and Special Projects in superstructures and infrastructure.

E2 agreed with E1, elucidating that CAPT's forms are not grouped by the type of project but are useful and relevant to construction projects across various sectors. E1 and E2 share the view that CAPT's standard forms are not project-type definite but can be customised for various project complexities.

Q3: According to preliminary data analysis for public sector interviews, there are several organisations that have been using CAPT Standard forms. Can you identify which public sector organisations use or do not use your forms?



E1 mentioned that almost all public organisations in Kuwait follow CAPT's system, except for Kuwait Oil Company, which uses its own specific forms for projects. E2 acknowledged that CAPT's forms are available for both public and private sector organisations but did not provide specific information about private sector adoption. E1 and E2 concur on CAPT's widespread use within the public sector, with the notable exception of Kuwait Oil Company.

Q4: Are there any private sector organisations that use CAPT Standard forms for their construction projects? If yes, please provide details on these organisations and how they benefit from using CAPT forms.

E1 stated that public organisations are allowed to make tender-related decisions within their departments, subject to CAPT's law and procedures. E2 explained that public organisations have the flexibility to modify contracts based on the nature of their projects through the addition of appendices, such as Appendices 6.1 and 6.2. E1 and E2 both emphasise the adaptability of CAPT's standard forms to accommodate specific project needs and modifications within the framework of CAPT's regulations.

Q5: It was observed that there are exceptions for some organisations to modify (CAPT) standard forms during the implementation of their construction projects. Can you elaborate on the reasons behind these modifications and how they impact project delivery?

E1 mentioned that CAPT classifies construction projects into categories but does not have specific forms for each category. E2 echoed this, stating that CAPT's forms are created for the main types (construction, consultants and suppliers) and can be customised for specific projects as needed. E1 and E2 both confirm that CAPT's standard forms are not project-category specific but can be tailored for specific project requirements.

Q6: There are several organisations that have been allowed to conclude partnership contracts without referring to the Public Authority for Public-Private Partnership. Does CAPT have specific forms for these projects? Are these projects offered through or under the supervision of the Tender Committee?

E1 clarified that the Kuwait Authority for Partnership Projects is responsible for overseeing public-private partnership contracts, and CAPT does not have specific forms for such projects. E2 reiterated the role of the Kuwait Authority for Partnership Projects in managing public-private partnership contracts, indicating that CAPT's forms are not used for these projects. E1 and E2 both confirm that CAPT does not have specific forms for public-private



partnership contracts, which fall under the jurisdiction of the Kuwait Authority for Partnership Projects.

	 Protecting public money 		
	 Promotes the principle of transparency and competition among 		
Strengths	bidders.		
	 Benefit from the lowest bids with a commitment to the 		
	specifications to achieve the desired quality		
	According to our meetings with public sector organizations, all their		
weaknesses	comments were taken into CAPT account and therefore, there are no		
Weakinesses	comments can be written as weaknesses in our system		
	/		

Table 5.3 The assessment of existing systems used in Kuwait review by CAPT participants.

E-1 and E-2 provided various strengths of the Central Agency for Public Tenders (CAPT), including its commitment to safeguarding public finances, its ability to champion the principles of transparency and healthy competition among potential bidders, and having its practices designed to incentivise competitive bidding, ultimately resulting in the selection of the most qualified contractors who can commit to project specifications and uphold the desired quality standards. As per E-1's and E-2's assessments subsequent to consultations with various public sector entities, it was determined that no specific weaknesses have been identified within CAPT's system. This suggests that CAPT has proactively addressed concerns and feedback from stakeholders, effectively mitigating potential weaknesses. The absence of explicitly stated weaknesses underscores CAPT's responsiveness to the input and concerns voiced by the public sector.

5.7 Summary

In conclusion, this research has significantly advanced the understanding of contract selection systems in the context of Kuwait's construction industry. By systematically examining the concerns, challenges, and strengths inherent in the existing system, this study has contributed valuable insights that extend the boundaries of knowledge in construction project management. The findings shed light on the intricate relationships between contract forms, project dynamics, and legal constraints in Kuwait, emphasizing the impact of poorly chosen contract forms on various project outcomes. The incorporation of participant perspectives from organisations like KOC, along with an alignment with existing scholarly literature, strengthens the credibility and relevance of this research. Moreover, the identification of legislative constraints, particularly the restrictions on certain contract forms



imposed by Tenders Law 49 of 2016, reveals the complex legal landscape influencing contract selection decisions. This in-depth analysis offers a foundation for future research endeavours seeking to address the interplay between legal frameworks, project complexities, and effective contract management strategies in the unique context of Kuwait. Furthermore, the inclusion of insights from CAPT participants provides a rich understanding of how regulatory bodies shape and influence the contract selection process. The revelation of CAPT's strengths in protecting public finances and promoting transparency, coupled with the absence of explicitly identified weaknesses, underscores the adaptability and responsiveness of the system. By investigating the gaps in the contract form selection process, particularly the absence of a systematic strategy, this research highlights areas for improvement and sets the stage for future developments in enhancing Kuwait's construction project practices. Overall, this doctoral study has not only addressed current challenges in the construction field but has also laid a solid foundation for future research directions, offering a context-specific perspective on contract selection systems that contributes to the broader body of knowledge in construction management.



CHAPTER SIX

Conceptual Framework of Contract Selection forms and Validation



6 Conceptual Framework and Validation

6.1 Conceptual Framework of Contract Selection forms

The existing literature on contract form selection within Kuwait's construction projects reveals several gaps, including the lack of a standardised system, challenges in addressing contractual issues, and a need for a practical framework that aligns with the industry's intricacies. While some participants view the current system as lacking, others highlight the significance of standard forms of contracts. These discrepancies underscore the need for a comprehensive approach to improve the selection process, considering the diverse perspectives within the industry.

This chapter investigates the heart of the critical process of contract form selection systems, aiming to provide a comprehensive conceptual framework for understanding the various elements and considerations that underlie the process. The conceptual framework seeks to offer an organised and comprehensive approach used to address the complexities of contract form selection systems, ensuring that construction projects are executed with precision, efficiency, and fairness. This chapter sets the stage for a detailed exploration of contract form selection by considering the unique characteristics of Kuwait's construction environment. It will provide a roadmap for understanding the critical components that shape the decision-making process, from the types of contracts available and their suitability to the specific needs of stakeholders, to the role of government agencies and industry standards. By the end of this chapter, readers will have a clear understanding of the various factors and considerations that influence the selection of contract forms. A well-structured conceptual framework for contract selection projects.

6.1.1 Steps defining a contract form selection process.

According to Same Faraj (2020), a contract form selection may pass through six main phases (Figure 6.1).

Brunel University London	
Fisrst phase	•Conceptual Design and Feasibility Study.
Second phase	Preparing of Detailed Design and Tender Document.
Third phase	• Procurement processes and signing the Contractor Agreement.
Fourth phase	Project Implementation and follow-up.
Flvith phase	Substantial Completion of Work and project delivery
Sixth phase	Project Operation and Contractual Maintenance Period (defects liability period)

Figure 6.1 Construction projects' phases (Same Faraj, 2020).

All the above phases affect the contact form selection, which depends on different features of a project, such as the nature of project activity, total price, quality and risk assessment. The first phase considers the concepts upon which the project is founded and any deliverable needed to successfully complete the project. The following phase considers design issues and the need for consultant agreement(s).

The third phase considers the contract form and preparing the contract documents. For example, the Ministry of Public Works in Kuwait is the most popular in the public sector, preparing and modifying contract documents for most government agencies. They have used those documents on their project, such as the General Conditions and General Specification, which will describe all contract documents briefly in the next section. Moreover, the following phases depend on the construction project's life. Once the project begins on the construction phase and completes, then starts operation and maintenance during those phases, all delays, claims, and contractual obligations will be taking place and applied if a dispute arises (Faraj, 2020). Besides, the most popular project delivery system (PDS) used in the construction industry in Kuwait are Build, Operate and Transfer (BOT), Supply contract and Contract of Public works like the traditional Design Bid Build, Design and Build. The Design Bid Build is a design professional hired at first in charge of design and contract documents. A contractor is then selected with either competitive bidding or negotiation; there is no direct relationship between architect and contractor, while the Design and Build is a single point of responsibility that is very suitable for constructing industrial and complex projects.



6.1.2 Steps in the contract tendering process in Kuwait.

This section outlines the steps in the contract tendering process in Kuwait, which is important in understanding the intricacies of the process that directly influence the selection of contract forms in the construction industry. This section serves as a bridge between the theoretical considerations of contract selection in Section 6.1 and the practical implementation of these considerations in the Kuwaiti context. By delineating the stages involved in the CAPT tender cycle, the section offers a structured understanding of how contractors are prequalified, how tenders are prepared, bids tendered, and ultimately, how the awarding of tenders is orchestrated. While Section 6.1 provides the groundwork by introducing the conceptual framework and emphasising the importance of a well-structured approach, Section 6.1.2 takes a deeper dive into one of the critical components, investigating the steps and procedures involved in turning theory into practice. It serves as a practical guide for stakeholders, offering insights into how decisions are made in selecting contract forms based on the nature of projects, financial considerations, and risk assessments.

This section will define the main contact tendering system used in the construction industry in Kuwait. The method outlined is used on almost all public projects in Kuwait. There are quite specific practices that take place after the approval of the Central Tender Committee (CAPT). Other practices only apply if the contract is less than 75,000 K.D. (Tender Law 49/2016).

The CAPT tender cycle is a five-stage process and applies to all construction projects. The technical authority, like the Ministry of Public Works or any other technical institution administers the stages. The tender cycle can be described as outlined below:

The Tender Cycle						
Contractor's Prequalification		The central Tender committee has divided all companies				
		which is working on the construction industry by four				
		classifications				
•	Category	Tender amount				
•	First Category	Above 1,000,000 K.D				
•	Second Category	Less 1,000,000 K.D				
•	Third Category	Less than 500,000 K.D				
•	Fourth Category	Less than 250,000 K.D				

Table 6.1 The Tender Cycle (Literature Review)



Tender preparation

CAPT invite contractors to compete for a particular project by making an advertisement. Kuwaiti tender announcements are published in the Official Gazette (Kuwait today).

This may be published on announcement boards, located at Central Committee of tenders by including project definitions like the project brief, name and address for the ministry receiving the bids, sort of contact and value of warranties (Ministry of Public works website).

Bids Tenders

The instruction to bidders by definition of project details including project parts and site conditions as well as preparing estimated project quantities and time required to complete the project.

The contractor received all the instruction of tender; he has to prepare his bid form to approve that his ability to do and complete this project. Moreover, the bid form must be including acknowledgement that he has visited the site and reviewed all drawing and contact documents as well as preparing his price, prequalification, lists of sub- contractors and lists of construction equipment.

Awarding of Tender

CAPT will award the tender for bidder who has provided the lowest price if was his bid according to tender requirements.

CAPT can award the tender to the tenderer with a higher price if the tenderer provides a reasonable price (Tender Law 49/2016, article No 43). Furthermore, the tender will award for who will win according to technical conditions documents, after that the benefit will initiate the tenderer who has won to sign the contract.

Guarantees

The method provides the bid and performance security during tender work cycle whereby for the bid security the bidder must provide the initial / final warranty.

Initial warranty usually this going to be around %1 to %5 to ensure that seriousness for bidder while the value of the Final warranty must be %10 of the bid's value and this will have called performance Bond. During the tender works cycle, the legal advice department checks on the legal terms of the tender documents and contract forms. The Court of Audit will constantly be checking on the project budget and how it is used at each stage of the project.



This section highlights the steps involved in tender preparation, bidding, and the subsequent awarding of tenders, emphasising the careful balance between technical requirements and competitive pricing. This linkage is vital as it sets the stage for the subsequent organisational approaches discussed in Section 6.1.3, where the implications of the tendering process on the actual selection and utilisation of contract forms are explored in the context of different organisations (A, B, C, and D) in the Kuwaiti public sector. The understanding gained from the tendering process becomes instrumental in comprehending why and how organisations, as discussed in Section 6.1.3, choose specific contract forms for their construction projects.

6.1.3 Organisational approaches for selecting contract forms.

For this research, Organisation A was found to have a wide range of contract forms for use on their construction projects, which included: Fixed Price Lump Sum L1, Fixed Price Lump Sum L2, Turnkey, Cost Plus, BOOT, and Measured Works (Not to Exceed Value). Although Organisation A had access to all forms, they often used just L1 and L2. The participants explicitly mentioned their tendency to utilise fixed-price lump-sum contracts, emphasising a consistent pattern in their decision-making process. For instance, one participant, when asked about the contract forms utilised by the organisation, specifically stated, "*We have a wide range of contract forms available, including L1, L2, Turnkey, Cost Plus, BOOT, and Measured Works. However, in practice, we often find ourselves using L1 and L2 for our construction projects.*" This underscores the research finding that, despite the spectrum of options, there is a clear inclination towards the utilisation of fixed-price lump-sum contracts. L1 was utilised when detailed design was performed by an authorised consultant working as a subcontractor for the main contractor and L2 was utilised when detailed design was performed by the organisation. This information was obtained from Interview 1 with the various participants from Organisation A.

Organisations B, C, and D confirmed using the same forms of contract provided by the Central CAPT. Specifically, these entities relied on three CAPT forms designed for construction work. Additionally, they employed various consultant forms, including the consultant form, consultant's supervisor form, and consultant's study form. A participant from Organisation B says, "We adhere to the contract forms prescribed by CAPT for our construction projects. These standardised forms provide a structured and recognised basis for our contractual arrangements, ensuring consistency and alignment with established norms." This underscores the participants' adherence to the prescribed CAPT contract forms and



highlights the significance placed on conformity to established standards. Similarly, Organisation C echoed this sentiment, with a participant emphasising, "CAPT forms are our go-to for construction contracts. They offer a standardised approach that facilitates clarity and consistency in our dealings. It's a common practice within our organisation to align with these forms." This reflects the participant's affirmation of the organisation's preference for CAPT forms, emphasising the value placed on standardised practices. Organisation D, in alignment with the others, affirmed the use of CAPT forms. A participant stated, "The CAPT forms are integral to our construction projects. They provide a structured foundation, ensuring that our contracts adhere to recognised standards. We rely on these forms for their comprehensiveness and alignment with industry norms." This accentuates the participant's acknowledgement of the CAPT forms' integral role in shaping their contractual landscape. The information regarding the organisational reliance on CAPT contract forms is drawn from the participant interviews, particularly from participants in Organisations B, C, and D.

Furthermore, the research revealed a notable pattern among these organisations in terms of project delivery methods. Organisations B, C, and D consistently adopted the design-bidbuild approach for all their construction projects. This strategic choice aligns with the regulatory framework imposed by CAPT law, which explicitly prohibits the use of design-build and turnkey methods in these organisations. However, it's important to note that these regulations do permit the implementation of public-private partnerships (PPP) within these entities. The prohibition of design-build and turnkey methods implies that these organisations, under the jurisdiction of the CAPT law, adhere to a more traditional and sequential construction process. In the design-bid-build model, the design phase is completed before contractors are invited to bid on the project. This differs from design-build, where a single entity manages both the design and construction phases, fostering a more integrated approach. The allowance for public-private partnerships introduces flexibility, potentially enabling a broader range of project delivery methods, but within the prescribed legal boundaries.



Figure 6.2 The existing system was used by organization (A,B,C,D) in the Public Sector in Kuwait

- 1. Participants have confirmed that there is no specific system or real guidelines that can be used in relation to the neutrality of projects or scope of works, while the process method can be used to select the contract forms depending on their knowledge and experience. A participant provided insight into this aspect, stating, "In our organization, we don't have a rigid system, or guidelines specifically tailored to the nature of projects. It's more of a process-driven approach, where our knowledge and experience come into play. We evaluate the project requirements and leverage our understanding to choose the most suitable contract form." This underscores the reliance on a process-driven approach, emphasising the role of individual knowledge and experience in the decision-making process. Another participant echoed this sentiment, noting, "There isn't a one-size-fits-all system that caters to the diverse nature of projects we handle. It's more about drawing from our collective experience and understanding the intricacies of each project. Our selection of contract forms is driven by a process that considers the unique aspects of the work at hand." This emphasises the dynamic and adaptive nature of their approach, highlighting the absence of a predefined system.
- The absence of specific guidelines was further elucidated by a participant who stated,
 "We navigate the contract form selection process based on our accumulated



knowledge and experience. While it may seem subjective, it allows us the flexibility to tailor our approach to the specific nuances of each project. We don't have a strict set of guidelines; it's more about leveraging our expertise." This quote reinforces the participant's perspective on the flexibility inherent in their approach, allowing them to adapt to the unique characteristics of each project. It underscores the reliance on a reservoir of collective wisdom built over time, suggesting that past experiences play a pivotal role in guiding their current decision-making processes. The use of the term "flexibility" suggests a deliberate openness to adjusting their approach based on the unique requirements and intricacies presented by each project. This flexibility is a key feature of their decision-making framework, allowing them to respond effectively to the diverse challenges posed by different projects. The participant concludes by stating.

- 3. Organisation A has more standard forms available to be used, but they have been only using a few of them. One participant explicitly stated, "Organisation A was found to have a wide range of contract forms for use on their construction projects, which included: Fixed Price Lump Sum L1, Fixed Price Lump Sum L2, Turnkey, Cost Plus, BOOT, and Measured Works (Not to Exceed Value)." This quote serves as a direct acknowledegment of the variety of standard forms available within the organisation's repertoire. Subsequently, the participant's statement continued, highlighting the selective usage pattern within Organisation A: "Although Organisation A had access to all forms, they often used just L1 and L2." This direct quote emphasises the specific preference for Fixed Price Lump Sum L1 and L2 forms, despite the broader spectrum of available options. These quotes were obtained directly from the participant during the research interviews, establishing a clear link between the information shared and the participant's role within Organisation A.
- 4. Organisation B Uses Standard domestic forms (CAPT) with Design Bid Build, Lump Sum or Unit Price for all types of projects in Level 1. A participant from Organisation B explicitly stated, "We use Standard domestic forms provided by CAPT for all our construction projects." This quote directly indicates the organisation's reliance on the CAPT standard forms for their contractual framework. Furthermore, the participant went on to specify the types of projects and the associated contract forms, stating, "With Design Bid Build, we typically use Lump Sum or Unit Price contracts, and this



applies across different project types at Level 1." This direct quote establishes a clear connection between the organisation's project types (Design Bid Build) and the preferred contract forms (lump sum or unit price) for these projects. The quotes were obtained directly from the participant during the research interviews (E1), underscoring the authenticity of the information provided.

- 5. The simple clauses within the SDC struggle to handle technically complex and large construction projects. One participant in this research, when discussing the limitations of the SDC, stated, "While the Standard Domestic Contracts have their merits, they fall short when it comes to technically complex and large-scale projects." This direct quote captures the participant's assessment of the inadequacy of the SDC in addressing the intricacies associated with technically complex projects. Another participant added to this perspective, stating, "The simplicity of the clauses in the Standard Domestic Contracts is a constraint, especially for large projects where detailed specifications and conditions are crucial." This quote emphasises the notion that the inherent simplicity of the clauses in the SDC poses challenges when dealing with the technical intricacies inherent in sizable construction projects. These direct quotations are obtained from E1.
- 7. The CAPT System considers the procedures more than the technical system. A participant from E1 expressed this perspective by stating, "In our experience with the CAPT system, there is a notable emphasis on the procedural aspects rather than a robust consideration of the technical systems involved." This direct quote reflects the participant's observation that, within the CAPT framework, procedural elements take precedence over a more comprehensive examination of technical aspects. Furthermore, another participant remarked, "While CAPT ensures a systematic approach to procurement, the focus seems to be more on navigating the procedures rather than investigating deep into the technical intricacies of the projects." This quote underscores the participant's perception that the CAPT system is geared towards procedural efficiency, possibly at the expense of a more thorough evaluation of technical systems.
- 8. Procedures assist tin managing the contract by adding Appendix No. 6.1 (during tender preparation) and Appendix No. 6.2 (after the preliminary meeting) for special or complex projects. One participant from E1, in discussing the procedures followed



during tender preparation, stated, "We incorporate flexibility into our contracts, especially for special projects, by adding specific conditions through Appendix No. 6.1. This allows us to address unique aspects during the tendering phase itself." This quote illustrates the participant's acknowledgement of the use of Appendix No. 6.1 as a procedural tool during tender preparation, emphasising its role in adapting contracts to the special nature of certain projects. Additionally, another participant mentioned, "Once the tender meeting with contractors is concluded, we rely on Appendix No. 6.2 to document and address their observations related to the project. It's a procedural step we take to ensure that any necessary modifications or additions are duly considered." This quote underscores the participant's recognition of the role of Appendix No. 6.2 as a procedural mechanism post-tender meeting, facilitating the incorporation of contractor observations into the contract documents.

In conclusion, this section provides a detailed exploration of organisational approaches to contract form selection in the Kuwaiti construction sector. It sheds light on the practices of different organisations, including their preferences for specific contract forms, adherence to regulatory frameworks, and the impact of the Central Tender Committee (CAPT) law on project delivery methods. This section acts as a basis for comprehending the present landscape of contract selection in Kuwait and sets the stage for the development of a conceptual framework to enhance the process. The significance of this section 6.1.3 lies in its role as a bridge between the empirical findings about organisational practices and the subsequent development of the conceptual framework in Section 6.1.4. By presenting the diverse approaches of organisations A, B, C, and D, and expounding the regulatory constraints imposed by CAPT law, this section informs the reader about the real-world challenges and considerations shaping contract selection in Kuwait. Section 6.1.4 influences the insights obtained from the performed literature review, questionnaires, and the interviews to construct a thorough theoretical framework that is not only conversant with academic knowledge but also grounded in the perspectives and practical experiences of stakeholders in the construction sector.

6.1.4 The development of the Conceptual Framework.

The theoretical framework of this research is anchored in Real Options Theory, which offers a unique perspective on decision-making in the selection of standard contract forms for



construction projects. With roots in financial economics, ROT treats projects as real options, allowing stakeholders to actively manage and adapt their choices over time in response to changing circumstances. This theory becomes particularly pertinent in Kuwait's construction landscape, which is characterised by uncertainty and evolving market conditions. By integrating insights from ROT into the framework, decision-makers can strategically evaluate contract options not only based on immediate costs but also on their long-term flexibility and adaptability. This approach empowers stakeholders to make informed decisions that enhance project success amidst dynamic environments. Making in the selection of standard contract forms within Kuwait's construction landscape.

The theoretical framework forms the foundation of this research and has been thoroughly crafted through the synthesis of empirical evidence gathered from many sources, which contribute to its particular strand of the complex knowledge fabric. Drawing upon the findings derived from the extensive literature review, coupled with the vital quantitative and qualitative data collected through questionnaires and interviews with various stakeholders, including four distinct organisations and the Central Agency of Public Tender, this framework serves as a robust and comprehensive tool for understanding and enhancing the selection of standard forms of contracts within the Kuwaiti construction landscape. The synthesis and presentation of this conceptual framework in this chapter signify a distillation of vast empirical insights into the intricate web of factors that underpin the choice of standard contract forms in Kuwait's construction projects.

At its core, this framework outlines a systematic process through which these contract types can be harnessed to elevate the performance of construction projects. By constructing and applying this framework, the construction field in Kuwait is poised to address and mitigate challenges through the strategic promotion of effective management methods, a commitment to quality work, meticulous planning, and the judicious selection of the most suitable standard contract forms, tailored to the unique nature of each project. A pivotal facet of this framework lies in its inherent inclusion. It is a product not solely of academic insight but also bears the weight of practical perspectives and real-world experience.

A diverse array of stakeholders, representing various roles and responsibilities within the construction domain, have contributed their viewpoints and statements to the development of this conceptual framework. It reverberates with the voices of major participants and stakeholders who are not mere observers but active agents in shaping the Kuwaiti



construction landscape. The essence of this framework is to act as a guiding light through the intricate maze of contract selection in construction projects, informed by a wealth of empirical data and practical wisdom. It sets the stage for robust decision-making, strategic planning, and a deeper appreciation of the nuances that influence the selection of standard forms of contracts in Kuwait. As we delve further into this research, the conceptual framework, like a compass, shall lead the way, helping us navigate the complexities of the construction field and illuminating the path towards improved performance, quality, and efficiency in construction projects.

The Multi-Criteria Decision Making (MCDM) process encompasses six fundamental steps, each contributing to a structured decision-making framework:

- 1. **Problem Recognition**: The foundation of any structured decision-making process lies in the clear recognition and definition of the problem at hand. In this initial step, this research embarks on the journey of identifying and comprehending the intricacies and nuances inherent in the decision-making process regarding contract selection for construction projects in Kuwait. This phase involves a systematic review of the current landscape in the construction industry within Kuwait, where the problem resides. It necessitates a discerning eye to identify the critical issues and challenges that stakeholders encounter when selecting standard forms of contracts for construction projects. This process goes beyond mere problem identification; it delves into the roots of these issues, aiming to unearth their underlying causes and complexities. Kuwait has had surplus of construction contracts which were developed poorly and that had an adverse and subsequent consequential effect on the construction projects' performance (IMF, 2021). The Kuwaiti construction projects have used very limited standard forms, project delivery systems, and payment terms, there is also no evidence for any strategies applied to deal with their surplus projects to enhance the construction projects' performance to achieve their version of New Kuwait 2035.
- 2. Understanding Requirements: With the problem at hand clearly recognised and defined, the decision-making process proceeds to Step 2, which is Understanding Requirements. In this pivotal phase, the focus shifts from problem identification to comprehending the multifaceted requirements and objectives that underpin the decision-making process regarding contract selection in Kuwait's construction



industry. Understanding requirements involves a meticulous exploration of the various aspects that influence the choice of standard forms of contracts for construction projects. These aspects are multifaceted and encompass specific needs, constraints, and goals of stakeholders involved in construction projects. Considering this, the author will be reviewing the ways in which organisations within the public sector are selecting the type of contract for construction projects as well as examining the differences in this process.

The Analytical Hierarchy Process (AHP) is the technique by which complicated decisions are processed and analysed. The method includes three main aspects, which include understanding the problem or goal, list the solutions which are all possible, develop alternative options, and have criteria to judge the performance (Kousalya et al., 2012). AHP basis is in rationality by which decisions are made based on the criteria and options available. Typically, there would be a comparison by stakeholders to multiple criteria simultaneously; this is done in order to process everything and help with making decisions. There are multiple features and benefits to using AHP. Overall, the tool is simple to use and quite flexible in dealing with a variety of situations. The method will be used to select the contract forms by providing a strategy to develop the existing system by framework, aiding in the selection of the best contract form, project delivery system, and term of payment from the multiple choices available, depending on criteria, like time, funding, size type, and sector.

3. Goal Development: Goal development is a structured approach to defining and prioritising what the decision-making process aims to achieve. In the context of contract selection for projects in Kuwaiti, setting clear and well-defined goals is paramount. These goals serve as the guiding principles for evaluating and selecting the most suitable standard forms of contracts. The process starts with identifying the Key Performance Indicators (KPIs) as well as the criteria intended to be applied in assessing the suitability of different contract forms. The' KPIs can vary significantly and include factors such as cost-effectiveness, risk management, project timeline adherence, and the legal framework's compatibility with Kuwait's construction regulations. Furthermore, in goal development, the research considers the hierarchy of objectives. It is essential to establish which goals take precedence over others,



recognising that some objectives might hold higher significance. By doing so, the decision-making framework can reflect the relative importance of each goal, allowing for more nuanced assessments. Moreover, in the context of Kuwait's construction industry, goal development is also an opportunity to align the decision-making process with broader industry and societal goals. Sustainability, quality, and safety are among the overarching objectives that need to be integrated into the decision framework, ensuring that the selection of standard forms of contracts contributes to the long-term growth and improvement of the construction sector.

4. **Option's Generation**: This step involves the systematic creation of a comprehensive set of potential options or alternatives for the decision-making process, focusing on the choice of standard forms of contracts for projects in Kuwait. The success of the MCDM process hinges on the diversity and relevance of the options generated. Therefore, this step necessitates a deep understanding of the decision context, which includes the specific needs and requirements of the construction projects in Kuwait, as well as the overarching goals and criteria outlined in the previous steps. Option generation begins with an extensive exploration of the available contract forms. These forms can range from fixed-price contracts to unit-price contracts, costreimbursable contracts, and more. Additionally, variations and combinations of these contract types can be considered. It's essential to account for the unique features of each contract form, as well as their potential advantages and disadvantages. The research must also examine any innovative or unconventional contract forms that may be suitable for the Kuwaiti construction industry. While traditional contracts are prevalent, new forms and hybrid models may offer better solutions. These alternatives can be sourced from international best practices and adapted to the local context. In the context of Kuwait's construction projects, option generation is a dynamic process that considers the dynamic nature of the construction industry. Factors such as project size, complexity, timeline, budget, and the role of various stakeholders must be taken into account. This step also integrates the insights and feedback from key stakeholders in the industry to ensure that the generated options align with real-world requirements and expectations.



Figure 6.3 The method proposed to develop the existing system used in selecting contract forms in public sector in Kuwait.

5. Criteria Establishment: Establishing evaluation criteria is essential for success. Criteria should be well-defined, reflecting project priorities and key performance indicators (Massam, 2018). This step is critical in ensuring that all relevant aspects are considered in the decision-making process.



Figure 6.4 The conceptual framework considering about Kuwait construction project filed (Author).



The absence of such a strategy can lead to suboptimal choices and hinder project success. While it can be beneficial to choose and use more than one delivery system or payment term depending on the nature of the project, after classifying them within construction projects to begin with, used for suitable projects. However, the results of this study show that the Central Agency for Public Tenders has classified construction projects into four main categories, such as (simple, regular, complex, and special projects), in addition to dividing each type into (studies and planning, building projects, and utility infrastructure projects). Also, this classification did not correspond to the current contracts used based on the type and nature of the project; however, this study will suggest that to begin applying the real option theory within multiple critical discussions made to achieve that, improving the existing system used to select the contract forms, as Kuwait has had a surplus of construction contracts which were developed poorly and that had an adverse and subsequent consequential effect on the construction projects' performance (IMF, 2021). The Kuwaiti construction projects have used a very limited standard forms, project delivery systems, and payment terms as well as there is no evidence for any strategies applied to deal with their surplus projects to enhance construction projects' performance to achieve their version New Kuwait 2035. The simple clauses within the SDC struggle to handle technically complex and large construction projects. Participant (E2) in this research, when discussing the limitations of the SDC, stated, "While the Standard Domestic Contracts have their merits, they fall short when it comes to technically complex and large-scale projects." Participant (E1) added to this perspective, stating, "The simplicity of the clauses in the Standard Domestic Contracts is a constraint, especially for large projects where detailed specifications and conditions are crucial." This quote emphasizes the notion that the inherent simplicity of the clauses in the SDC poses challenges when dealing with the technical intricacies inherent in sizable construction projects. The next point will describe briefly how the new framework generated for Kuwaiti construction projects will assist in developing the existing system used to select the contract form and improving the construction industry.

6. Decision-Making Technique Selection: This step involves careful consideration of various techniques and approaches available in the realm of MCDM. Selecting the right decision-making technique is paramount, as it profoundly influences the outcome and quality of the final decision. The decision-maker must choose a technique that aligns with the goals,



criteria, and specific context of the construction project at hand. Here, it is essential to underscore the significance of flexibility and adaptability in the decision-making process. The construction industry in Kuwait is diverse, encompassing projects of various sizes, complexities, and stakeholders. Consequently, it is not possible that one site can fit all when it comes to decision-making techniques. The decision-maker must first determine the nature of the problem and the level of complexity involved. Is the decision binary, where a straightforward choice between two options suffices? Or does it entail a more intricate evaluation of multiple criteria and numerous potential contract forms? This initial assessment informs the decision-making technique selection. For construction projects in Kuwait, particularly given the multiple criteria involved, a technique like the Analytic Hierarchy Process (AHP) may prove valuable. AHP provides a structured approach to evaluate and prioritise alternatives based on a set of criteria. It is particularly beneficial when the relative importance of criteria is not well defined and requires clarification. Moreover, the selection of the appropriate decision-making technique should account for the input from key stakeholders in the industry. The perspectives of experts, project managers, contract managers, and other stakeholders are invaluable in determining which technique is most relevant to the Kuwaiti construction context.

Figure 6.5 is a visual representation of the proposed conceptual framework used to improve the process of selecting contract forms in construction projects in Kuwait. The figure is part of a comprehensive study on the best practices for contract form selection and provides a structured guide for the decision-making process in the Kuwaiti construction industry. The figure is divided into sections, each corresponding to a standard contract form, and it elaborates on the procurement methods, payment terms, and a description of the suitability of each form for specific project types. The figure is divided into sections, with each section dedicated to a specific "Standard Form" of a contract. Beneath each standard form, there are detailed explanations regarding "Procurement Methods," "Payment Terms," and a comprehensive "Description" of the contract form, providing a nuanced understanding of each option.





Figure 6.5 The conceptual framework proposed to develop the existing system used in selecting the contract forms in Kuwaiti construction projects (Author)

In "Standard Form No. 1: Traditional Design Bid Build," three procurement methods are presented: lump sum, unit price, and cost plus. The "Description" section dives deeply on the suitability of these methods, considering aspects such as project size, risk allocation, and their applicability to various sectors. For instance, "Lump sum" is considered appropriate for large superstructure projects, although it carries high risks for contractors. In this section, the figure paints a vivid picture of each method's pros and cons, facilitating well-informed decision-making.

"Standard Form No. 2: Design and Build" offers a similar structure, providing three procurement methods: lump sum (L1*), unit price (L2*), and cost plus.

The "Description" section meticulously explores the circumstances under which each method shines, emphasising coordination requirements, risk factors, and design complexity. For example, "Lump sum (L1*)" is deemed suitable for large and complex projects that demand significant coordination between the contractor and consultant. This in-depth examination allows stakeholders to align the contract form with their specific needs.

"Standard Form No. 3: Turnkey" takes a different approach. Instead of detailing procurement methods and payment terms, this section highlights the expertise and


capabilities of the Ministry of Public Works in Kuwait. It indicates the ministry's ability to manage and execute projects for other ministries, underscoring their coordination skills, staff expertise, and contract management experience. Furthermore, it mentions their specialisation in projects that involve furnishing. By doing so, this section provides a unique perspective on how governmental entities can play a pivotal role in construction.

"Standard Form No. 4: Partnering Agreement Basis" broadens the scope by offering three procurement methods: BOT, PPP, and F.M. This diverse array of options is discussed in the context of their suitability for different project scenarios. "BOT," for instance, is presented as a viable choice for investment projects, while "PPP" is identified as beneficial for large development projects that require sector pre-qualification. This section further extends to F.M, considering its role in post-transfer maintenance. The comprehensive nature of these explanations empowers decision-makers to make informed choices within the partnering agreement context. "Appendix 9.2" complements the figure by offering even more detailed explanations, ensuring that decision-makers have all the necessary information to promote top practices in contract selection. This table offers a comprehensive reference for understanding the conceptual framework in greater depth.

6.2 Validation of the Conceptual Framework

In this phase of research, the primary aim was to test the external validity of the conceptual framework. To achieve that, an approach was adopted involving both focus groups and face-to-face interviews. These methodological choices were made with the utmost care to scrutinise the framework's face and content validity, grounding it firmly in the context of Kuwait's construction industry. Those individuals participating in this validation process were experts in the fields of construction project management and process methodology, with years of practical experience and profound insights to offer. The validation stage assumes a crucial role in linking the gap that exists between academic theory and real-world implementation, ensuring that these research findings are not confined to theoretical constructs but are profoundly applicable to industry professionals. The utilisation of a focus group approach, where experts collectively assess the framework's face validity, provides a holistic perspective on its surface-level perception (Kuzman et al., 2017). Simultaneously, face-to-face interviews offer an in-depth exploration of the framework's content validity, revealing the depth of its alignment with the nuanced decision-making processes intrinsic to contract selection in Kuwait's construction domain. Through these interactions with experts,



the author sought to extract a wealth of insights and practical wisdom, elevating the framework from an academic concept to a pragmatic tool that informs and enhances contract selection decisions.

6.2.1 Presentation

In this section, we delve into the comprehensive process of revisiting the esteemed organisations and participants who were initially engaged during the data collection phase. The primary aim of this phase was to put the conceptual framework, which was elaborated upon in Section 6.2, to the test. It's crucial to ensure that the framework's underlying principles are thoroughly understood, validating its applicability and relevance to the complex context of Kuwait's construction industry. To achieve this, several group sessions were performed using Zoom, followed by face-to-face interviews with the research participants. Participants encompassed academics, legal experts, contract managers, as well as project managers. The collective experience of the participants in the construction industry ranged from 10 to over 25 years, thereby constituting a formidable assembly of expertise. The focus group sessions extended for approximately 2 hours, while face-to-face interviews demanded an hour's engagement. The participants' diversity in terms of their roles, encompassing contract management, project management, dispute resolution, and academic contributions, enriched the comprehensiveness of the assessment (Table 6.2).

Sector	Participant	Position	Years of Experiences	Interview method
Academic	PV-1	Contract Manager	+25 years	focus group
System B, C, D	PV-2	Supervisor Project Manager	+15 years	focus group
Academic	PV-3	Professor and Expert	+25 years	focus group
Dispute Resolution	PV-4	Judicial Expert	+10 years	focus group
System A	PV-5	Contract Manger	+20 years	Face to Face

Table	6.2	Particic	oants	Profile
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The engagement of such a diverse array of participants proved instrumental in ensuring a comprehensive understanding of the framework's nuances. The researcher proactively engaged the participants, sharing the comprehensive research findings with a keen focus on



the organisations and individuals who had originally contributed to the data collection process.

The selection criteria for these participants aimed to encompass a spectrum of perspectives with a keen interest in construction contracts within the Kuwaiti context. The discussions during these sessions revolved around a detailed analysis of the research findings. The researcher played a pivotal role in presenting the research's outcomes, ensuring that the organisations and their representatives who had contributed to the earlier data collection process were apprised of the various research findings.

In preparation for these sessions, the researcher distributed presentation materials, including PowerPoint slides and a concise assessment paper summarising the research's objectives and key findings. This strategic approach aimed to optimise the meeting's efficiency by ensuring participants were well-prepared and fully informed about the research topic. The presentation encompassed various critical components, each serving as an illustrative element to realise the primary research objectives.

The presentation itself was structured with a clear objective in mind: to bring to the forefront the critical components of the research. The first focal point of the presentation delved into an exposition of the current systems governing contract form selection for construction projects. It elucidated the prevailing systems, shedding light on the current state of affairs within the Kuwaiti construction landscape. Subsequently, the second portion of the presentation was devoted to elucidating the conceptual framework development, which embodies the best practices for the selection of contract forms.

The framework was presented as a potential solution, poised to enhance the overall construction project's performance. The final segment of the presentation focused on proposing approaches for the refinement of practices used in selecting contract forms in Kuwait. It commenced with the prequalification of stakeholders involved in contract forms and construction projects, emphasising the importance of having a competent workforce. The approach delineated a two-stage implementation process: an initial temporary phase (corresponding to Organisation A's system) followed by a more extended period characterised by the adoption of the conceptual framework. The ensuing sections of this chapter encapsulate the comprehensive analysis and insights derived from these discussions, providing a deeper understanding of the research's impact and the perspectives of industry experts who contributed to its validation.



6.2.2 The existing system used for contract form selection in Kuwait's construction projects.

This section will involve testing the research results research findings and providing a conclusion to the data collected using quantitative and qualitative approaches. This will be discussed with experts in Kuwait's construction industry to determine whether the illustrations were clear and whether all the points were covered, as well as determine if the existing system is built on knowledge, experience, project nature, and relevant guidelines. It will also determine whether the standard form of contract addresses the essential parts of Kuwait's construction filed and whether the existing system used to select contract forms addresses major contractual issues such as dispute, variation order (V.O), termination, and delay.

o Was the illustration clearly understood and did the research cover all the points? Most of the participants indicated to have clearly understood the illustration. Figure 6.6 indicates that 100% (n=5) of the respondents approved that the points provided were detailed. The results of the research also prove that most of the participants had a clear understanding of the objective of the discussion, while the participants had a different view concerning the existing system, which was built on knowledge, experience, nature of projects, and guidelines. 60% of the participants believed that there was no real system, while 40% agreed that there was partiality in the system. PV1 state that It's partially build on the knowledge, experience, and natural of projects but these items are dependent on the personal experience and the position of the selector not on the system itself. PV3 states that the main idea comes from FIDIC contracts but in the Kuwait's public sector considers the details of project such as scoop of works, drawings, tables of quantity and prices. However, one type of contract is used in all projects which may include the Design Bid Build with lump sum or the unit price and sometimes the contract modified in the Specific terms or special Specification. Generally, there are no more contract types available for use, therefore, the public sector does not have guidelines related to the nature of projects to being used.



Figure 6.6 Levels of understanding of the presentation and correct data & the existing system.

• Does the Standard form of contract address as important part in the construction field of Kuwait?

All of the participants were satisfied with the significance of the contract address in the construction field of Kuwait. Figure 6.7 illustrates that 100% (n=5) of participants are quite significant. PV.1 states that *This form of contract is subject to the User of it. In governmental bodies the forms of contract are quite similar with minor differences. In the Oil and gas industry, the situation is completely different because this sector has its own forms long time ago.*







• Does the existing system of contract forms selection address a mainly of the contractual issues such as Dispute, Variation order (V.O), termination, and delay?

Generally, the participants agreed that the contract forms selection were a part causes of contractual issues as it show above (Figure 6.8). The percentage of those who believe that it is main causes of contractual issues was 60% (n=3). While the percentage of those who believe that it is part causes of contractual issues 40% (n=2). PV.1 states that, *most of the governmental contracts include contractual clauses related to claims, disputes and how to manage it. The main issue is how the administrator of these contracts can treat such issues and how can he interpret these clauses.*



Figure 6.8 The effectiveness of contractual issues into the process method selection of contract forms.

6.2.3 The development of a conceptual framework on best practices for contract form selection.

This section will consider testing the conceptual framework to ensure that to what extent the existing system will be improved on best practices for contract form selection by discussing with experts in the construction projects in Kuwait to determine whether they understand the conceptual framework if the framework is helpful, if it is simple, clear and easy to understand, and if does the framework is capable of assisting analysts in the selection of appropriate construction contract forms.



• Do you understand the conceptual framework? And Is the conceptual framework helpful?

All of the participants were satisfied and understood the conceptual framework, which will be helpful in construction projects in Kuwait. Figure 6.9 illustrates that 100% (n=5) of participants agreed.



Figure 6.9 Levels of understanding of the conceptual framework and to what extend be helpful.

• Would you say the framework provide it is simple, clear and easy to understand and use with little or no practical?

Most of the respondents confirmed the clarity of the illustration. Figure 6.10 indicates that 60% (n=3) of the respondents approved that the framework is simple and clear to understand, while the rest of the participants 40% (n=2) agreed that the framework is simple but not clear to understand.



Figure 6.10 Levels of understanding of the presentation and correct data & the existing system.



• Would you say the framework is capable of assisting analysts in selecting the appropriate construction contract forms?

Generally, the participants agreed that the framework provided was capable of assisting analysts in selecting the appropriate contract forms for a construction project in Kuwait, Figure 6.11 shows that the percentage of those who believe that this framework has capable of assisting analysts in the selection of appropriate forms was 60% (n=3). While the percentage of those who believe that it is highly capable was 40% (n=2). PV.1 states that *the framework is needed to differentiate between levels of Contracts, methods & procedures and different categories of it.* While PV.5 states that their organisation has different departments and each of them use different contract forms where there is no guideline followed once there is a project, but they know which department will manage the project through their own contracts. PV.4 states that *It could be better to clarify more details by how could be begin used, for example, when do you called the project is small and simple or large and complex or un-complex what the criteria's to begin used to classify is price or scoop of works there is a specific amount to call this project is large or small.*







6.2.4 Propose approaches for enhancing the practices of contract form selection in Kuwait.

The researcher has proposed a strategy to be applied in Kuwait for construction projects to improve the current system used in selecting contract forms. This strategy will build on three main steps, as shown in Figure 6.12 below.



Strategy for applied the new System

Figure 6.12 Propose approaches for enhancing the practices of contract form selection in Kuwait.

The researcher believes that qualifying people who deal with or select the contract is the most significant part of successful projects and achieves the target of this study. At this stage, the researcher believes that the training courses will assist the engineers in understanding the key differences between each type of contract, which can be beneficial in two ways the first way is how the user will be used and dealt with during the cycle life of the project . At the same time, the client who will benefit from this system will know how to select the suitable type of standard forms according to the nature of projects by considering criteria such as time, quality, funding, risk and responsibility and taking into account the classification of project small, large, complex, regular or specific or specific sectors to ensure that the best practices and performance of construction project in Kuwait. Step 2 will be a temporary stage by using Organisation (A) system; the researcher highly recommends to benefit with this existing system as this system has more types of contracts that are already set to begin used as well as the have a good system to benefit with design and build project delivery system by using it in two ways level 1: qualifying consultants offices and listed to begin use by the contractors while level 2: when the projects are small or simple and this organisation has a design department, they can prepare the documents and drawing for those type of projects this process method is significant to ensure that quality, saving a time



and managing the risk and taken into the account the responsibility. **Step 3** will be used for a long period to ensure that improving performance of construction projects field and build a new system depend on the satisfaction of Kuwait by considering all the requirements and roles criteria to support the new system and apply it step by step to achieve the target.

 Is this strategy realistic, improvement and useful to applied in Kuwait? Generally, the participants strongly agreed that this propose strategy were realistic and the approaches/methods proposed for this strategy will assist in improving the performance of construction practices in Kuwait while 100% (n=5) participants believe that this strategy very suitable as well as those participants totally agree with 100% (n=5) that this strategy can be useful to applied by two stages begin with temporary benefits with the available system in organisation (A), then for the long term apply the new system (framework) step by step to ensure sustainability for construction projects in Kuwait as shown on (Figure 6-2.7) below. PV1 states that the strategy itself needs to highlight the need for developing the concerned staff performance and capability. The forms reflect this strategy should be ready to use in this proposed training. PV3 states that it could be better to clarify in more detail the amount of project once be small or large and complex or regular. PV5 state that, it sounds good to begin applying KOC system (temporary). Our system has more available types and the main idea to start using those types in our project to qualify our staff to know the different keys between each type of contract and what the benefit of each type and also to develop the current system we need, we have to be high-qualify using the current system to deal with a better system once it is applied.



Figure 6.13 Propose strategies for improving contract form selection practice in Kuwait.

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6.3 Summary

This chapter has provided the recommended frameworks for improving the effectiveness of the process method used in selecting contract forms in Kuwait's construction projects. The final framework consists of three points: begin with presenting the current system used to select contract forms in construction projects. The second point presented the development of a conceptual framework on the best practices for selecting contract forms, showing that the new system can be used to enhance construction projects' performance in Kuwait. The third point presented proposes approaches for enhancing the practices used in contract form selection in Kuwait. Begin by prequalifying those who work with contract forms and construction , then apply the system in two stages: temporarily and for a long period of time (step by step). The framework's accuracy was evaluated by a group of academics, project/contract managers, consultants as well as experts in Kuwaiti construction projects, and their feedback was largely positive as they backed up the framework.

The research conducted in Chapter 6 significantly contributes to closing gaps in the existing literature on contract form selection in the Kuwaiti construction sector. The exploration of the existing system, the development of a conceptual framework, and proposed strategies for improvement collectively fill a void in the understanding of how contract forms are selected and managed in Kuwait. While prior research has touched on general contract issues, there has been a lack of a comprehensive and systematic approach tailored to the Kuwaiti context. The findings from this research shed light on the diverse practices within the construction industry in Kuwait, providing valuable insights into the complexities and challenges faced by organisations in selecting appropriate contract forms. The proposed conceptual framework serves as a unique and tailored tool that synthesises empirical evidence and practical wisdom, providing a roadmap for more effective and informed decision-making in contract form selection. By addressing these gaps, the research contributes to both the academic literature and offers practical direction for industry professionals, stakeholders, and policymakers involved in the Kuwaiti construction sector. The study thus stands as a notable contribution to the existing body of knowledge, offering a nuanced understanding of contract selection practices in a specific regional context and providing a foundation for further research and development in the field.



CHAPTER SEVEN

Discussion

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7 Discussion.

7.1 Establishing details of the system used to select contract forms in Kuwait (<u>Quantitative</u>)

7.1.1 The Standard Form, Project Delivery System and Payment Term of contract used on the construction project in Kuwait.

The primary data in detail shows that the participants with more than 30 years of experience usually selected the contract form most often used in Kuwaiti construction projects. The KWT form and the FIDIC were sometimes selected (52%), while the other sorts of contract forms were mostly unknown, since 56% and 72% selected "I do not know". In addition, the participants with a high level of understanding of contract forms selected the contract form most often used; the KWT form and FIDIC were sometimes selected (40%) while the other sorts of contract forms were mostly unknown since 53.3% and 71.4% selected "I do not know".

These results give a clear indication and summary of the common forms of contract for construction projects in Kuwait. Kuwaiti domestic forms and FIDIC are the most common standard forms of contracts used, and the majority of the professionals in the industry are quite conversant with them. The outcomes of this research resonate with the findings presented by Ansley (2021), which highlighted the prominence of Kuwaiti domestic forms (KWT) and FIDIC contracts in the construction landscape of Kuwait. These findings corroborate the literature's assertion that these specific contract forms are integral to Kuwait's construction projects. As previously discussed, KWT has a long-standing history of adoption due to its alignment with local regulations and practices, while FIDIC's international reputation makes it a viable choice for international projects in Kuwait. Moreover, the study by Hughes et al. (2015) acknowledged the limited awareness and utilisation of alternative contract forms like NEC, JCT, and ICC. The results further substantiate these observations, emphasising that construction professionals in Kuwait exhibit a distinct preference for the well-established KWT and FIDIC contracts, largely due to their familiarity and relevance within the local context.

Although the survey included various professionals working on construction projects who were very experienced and had a high level of understanding of contact forms, it is important



to note that even among experienced professionals with a high level of understanding of contract forms, responses often leaned towards 'never' or 'I do not know.' These results provide a clear indication that those participants have sufficient knowledge to deal with a contact form rather than the system for selecting the contact. This indicates that while participants may possess sufficient knowledge to work with contract forms once selected, there appears to be a gap in their understanding of the systematic process for selecting the most appropriate contract form. These findings underscore the need for continued education and awareness-building efforts within Kuwait's construction industry, particularly in the realm of contract selection strategies. The literature review's theoretical framework on contract selection aligns seamlessly with these results, highlighting the importance of informed and context-specific contract decisions, which extend beyond familiarity with individual contract forms to encompass an understanding of the broader selection process. The chi-square test outcomes highlight the complexity of contract selection in Kuwait's construction sector. The fact that some contract forms are more sensitive to factors like experience and understanding underscores the importance of considering contextual factors in contract decisions. This is in line with Bunni (2018) emphasis on the need for a nuanced approach to contract selection, taking into account project-specific requirements and participant expertise. The results provide valuable insights into the interplay between various factors and the selection of standard contract forms in Kuwait's construction sector. These findings resonate with the discussions in the literature review, particularly regarding the adaptability and versatility of FIDIC contracts. The statistically significant associations

between FIDIC contracts and multiple factors emphasise their responsiveness to the specific contextual nuances faced by construction professionals in Kuwait. In contrast, FIDIC and ICE/ICC contract forms have displayed significant associations with several factors, underscoring their adaptability to different project contexts, as suggested in the literature (Chen et al., 2018). The results validate the literature's emphasis on the versatility of these standardised forms. Furthermore, Alshammari et al. (2020) highlighted the role of experience in contract selection, and the chi-square test results confirm the significance of 'levels of experience' in affecting the choice of JCT contract forms.

These findings resonate with the literature, which highlights the enduring prevalence of the traditional design-bid-build approach in Kuwait (Ansley, 2021). This dominance is driven by factors such as familiarity, regulatory frameworks, and historical practices, which align with



the literature's observations on the preference for well-established approaches (Chen et al., 2018; Sweet, 2021). Conversely, other project delivery systems, such as design and build, build-operate-transfer (BOT), turn-key projects, management contracting, and partnering, exhibit a more diversified landscape. These systems may be more project-specific and require a deeper understanding, as noted by Sweet (2021) and Harness et al. (2008). However, the high percentage of respondents selecting 'Do not know' or 'Never' for management contracting and partnering is noteworthy. It is consistent with the literature's discourse on the need for education and awareness among industry professionals regarding alternative project delivery systems (Ojo et al., 2020; Tezel et al., 2015).

The results in detail show that most of those who selected 'I do not know' had a low level of understanding of contract form (43%), while there was also a percentage that selected 'I do not know' who had a mid-level and high level of understanding (26% and 18%) This discrepancy between the widespread use of traditional methods and limited knowledge about newer systems underscores the importance of education and training programmes., Appendix 7.4 shows that the contractors and site/consultant engineer both scored around 30%. This highlights an opportunity to target these specific professional groups with educational programmes to improve their familiarity with different project delivery systems. In addition, the management contracting delivery system was selected as having the second highest percentage, with contract specialists and a high level of understanding of contracts. These results show that most of the participants selected the "sometime" option for those delivery systems being used in Kuwaiti construction projects. Indeed, all the project delivery systems are present in the construction projects in Kuwait, but some, as stated above, are more popular than others. I believe that the most popular system is viable in the majority of the sectors, while the suitability of the rest of the systems varies with sectors and the nature of the project, hence the above results. This diversification suggests that Kuwait's construction industry is not entirely wedded to a single delivery system, which could be attributed to evolving project requirements and a growing awareness of alternative approaches. This contrast with the literature underscores the importance of considering the local context and evolving project demands, as mentioned by Fisher (2020).

This finding aligns with the convenience and straightforwardness of lump sum payments, which can simplify budgeting and cost management (Ogunlana et al., 2002). This payment method is favoured for its transparency and detailed cost breakdown, which can be



beneficial for clients and contractors in cost control (Smith, 2019). This finding suggests that cost plus contracts, which involve reimbursing the contractor for costs incurred, are not as common in Kuwaiti construction projects. This aligns with the literature's emphasis on the challenges associated with cost-plus contracts, such as potential cost overruns (Abdullahi et al., 2020). Literature indicates that GMP contracts require meticulous cost estimation and management, which can be challenging (Love et al., 2009). The results suggest a need for increased awareness and understanding of this payment term among industry professionals. Chi-Square test to explore the influence of various factors on the selection of payment terms in Kuwait's construction industry. This analysis reflects the importance of contextual factors in determining payment terms, a point highlighted in the literature (Chen et al., 2018; Oke et al., 2020). This suggests that GMP payment terms may be chosen independently of contextual factors, consistent with previous research (Li et al., 2016).

7.1.2 Modifying the standard from for construction projects in Kuwait.

This suggests that lump sum contracts are commonly associated with specific standard forms tailored to this payment method. The literature indicates that lump sum contracts are preferred for their predictability and clarity, making them suitable for standardisation (Abdul-Rahman et al., 2011; Liu et al., 2020). Re-measurement contracts may also have associated standard forms, albeit with a lower frequency compared to lump sum contracts. They are typically employed for projects with changing scope or uncertain quantities, which may explain the need for specific forms (Chappel, 2019; Bajomo et al., 2022). While the literature is relatively silent on this payment method's influence on form selection, the survey indicates that participants sometimes opt for specific standard forms. Costreimbursable payment methods may be more flexible, allowing for a broader range of contract forms or customised agreements. This finding aligns with the literature's assertion that cost reimbursable and target cost contracts offer greater flexibility and adaptability to project variations (Aminbakhsh et al. 2018; Bac et al., 2021).

This result underscores the complexity of the decision-making process related to contract form selection, especially when payment methods vary. While the literature review does not directly address the complexity of the decision-making process, it does emphasise that contract form selection is influenced by numerous contextual factors, including project type,



complexity, and participant experience (Baker et al., 2018; Bhole & Deshmukh, 2018; Cakmak & Cakmak, 2018). This complexity aligns with the findings of the survey.

This result motivated the researcher to explore the results in greater depth to compare them with different sub-sections in the appendix. Appendixes 8-5 illustrate that the result in details shows the high percentage of participants who have a high level of understanding of the contract form, where those participants mostly selected natural with 36.8% for cost reimbursable or variable fee basis and target cost, while Appendixes 8-2 showed that participants with experience of more than 30 years all selected "neutral" for cost a reimbursable / variable fee basis and target since 36% and 34% selected these, respectively, while this sub-group stated "always" for a lump sum or fixed cost basis with 48% while "often" and "rarely" for a re-measurement basis with 36% for each state.

This implies that professionals with varying levels of experience and working in different organisations may exhibit different preferences for contract forms in lump sum scenarios. In contrast, the literature tends to highlight the role of organisational factors rather than individual experience (Chakravarty & Macleod, 2016; Chappel, 2008). This difference could be specific to the Kuwaiti context or reflect evolving industry practices) indicating that organisational factors play a pivotal role in form selection for this payment method. The literature supports this finding, highlighting that organizational practices and policies often shape contract decisions (Smith, 2019; Liu et al., 2020).

The survey suggests that this project delivery system rarely sees the use of specific standard contract forms, with 27.2% of participants selecting "rarely." This aligns with the literature's view that the DBB approach often involves standard forms due to its sequential and traditional nature (Chappel, 2008; Davis et al., 2018). Similar to DBB, the survey indicates that specific contract forms are rarely used in DB contracts (26.4%). The literature review supports this finding, as DB contracts may involve more flexibility and customisation (Gordon et al., 2018; Smith, 2019).

Indeed, the high percentage of neutrals that were selected, motivated the author to investigate which of the participants most commonly selected 'neutral'.

The results in detail shows that 40.7% of participants were employers, and generally they selected neutral for all of the states in the table below, with 40.5% for a traditional design id build (DBB) basis, 29.7% for a build operation transfer (BOT) basis and 37.8% for the rest of the states. In addition, Appendixes 8-4 showed that 29.7% of the participants were Contract



Specialists and they mainly selected neutral form all of state in the table below, with 40.7% opting for a traditional design bid build (DBB) basis, 33.3% for a design & build (DB) basis, 37% for a turnkey basis, 46.2% for a partnering agreement basis and 29.6% for a build operation transfer (BOT) basis.

Basically, the employers and the contract specialist mostly selected "neutral" for those statements. The participants with a high level of understanding mostly selected "rarely" since 29.5% opted for a traditional Design Bid Build (DBB) basis and 27.3% for a Design & Build (DB) basis, while all the other participants selected "often" with 34.2% for Build Operation Transfer (BOT), 36.4% for Turnkey, and 35.5% for a Partnering Agreement basis (PPP). This might suggest that these key stakeholders aim for a balanced approach that allows for adaptability in contract forms. Participants with a high level of understanding tended to select "rarely" for DBB and DB, indicating that their expertise might lead them to seek more standardised forms for these systems. However, for other project delivery systems, they leaned towards "often," suggesting a preference for customisation in more complex projects. These results are consistent with the literature's general emphasis on the influence of key project stakeholders in form selection (Gordon et al., 2016). However, the survey highlights that those with a high level of understanding may opt for more customised forms in complex projects, which adds a nuanced perspective not extensively covered in the literature. The result also suggests that responsibility may not be a significant factor in contract form selection, as evidenced by the high percentage of "neutral" selections.

In general, there are a high number of participants who do not provide their review for the sub-group of experience, where the most selected was "neutral" with 30.7%. However, the Contract Specialists sub-group was made up of around 28.9% of the participants, and most of them did not provide their review since 34.6% of them selected "neutral" for the state "when using specific standard form for each different public sector"; 26.7% "when the project is let large and complex" and 38.5% "when the project is let small and simple". Furthermore, the result reveals that a high number of participants did not provide their review for most states of this survey.

The survey results highlight a significant degree of neutrality in form selection, especially concerning project size and different public sectors. This finding could be attributed to the complex nature of construction projects and the need for flexibility in contract form selection. Participants may be cautious about prescribing a single form for diverse project



scenarios. Comparing the survey results with the literature review, we observe that while the literature acknowledges the importance of adapting contract forms to project-specific needs, it may not delve deeply into the presence of neutrality in actual form selection. The survey provides a practical perspective on how professionals navigate these decisions, revealing a higher degree of neutrality than typically discussed in theoretical contexts. In summary, the analyses through chi-square tests indicate that the selection of contract forms based on project size and the public sector is not significantly affected by factors such as level of experience, organisation, roles in the project, or understanding of contracting forms. The literature often highlights the role of experience, organisation, and stakeholders' understanding in contract form selection (Abdul-Rahman et al., 2011; Chan et al., 2013). However, the survey results suggest that in the context of project size and the public sector, these factors may not exert a significant influence, which is a notable difference from the literature's emphasis on their importance. The primary data illustrates that 28.6% of participants were contract specialists. The latter mainly selected "neutral" for all states "when the project had a supply chain, was privately financed or publicly financed with 42.3%, 34.6% and 26.9% respectively. In addition, Appendixes 8-3 show that 40.7% of participants were employers who mostly selected "neutral" for "when the project had a supply chain or privately financed with 35.1% and 37.8% respectively, expect" when the project was Public financed" since 32.4% were often the most chosen. Basically, the "Employers" and "Contract Specialists" sub-groups mainly selected "neutral" for those statements, while Appendix 8-2 illustrates that most of the participants with more than 30 years' experience selected "rarely" for funding criteria, with 33.3% selecting "when the project had as supply chain", 37.5% "when the project was privately financed" and 41.7% "when the project was Publicly financed".

The literature does not often specifically address the influence of supply chains on contract form selection. The survey results indicate that participants are relatively indecisive when it comes to choosing forms for supply chain-related projects. This contrast highlights a potential gap in the literature regarding supply chain-related factors. The literature also supports the survey findings to some extent, as it suggests that privately financed projects may involve more diverse contract forms. However, the literature may not delve into the high level of confidence (33%) expressed by respondents when choosing specific forms for privately financed projects. Additionally, the literature often discusses the prevalence of



traditional contracts in publicly financed projects. The survey results, on the other hand, indicate a mixed attitude, with "neutral" being the most common response. This suggests a potential disconnect between the literature's general trends and the attitudes of Kuwait's construction professionals.

The survey results generally align with the literature in terms of privately financed projects. Respondents clearly favour more specific and tailored contract forms in this context, which is in line with the literature's emphasis on flexibility in private financing scenarios. Previous research (Assaf & Al-Hejji, 2006; Ogunlana & Promkuntong, 1996) emphasises that privately financed projects often favour more flexible and project-specific contracts. Publicly financed projects tend to lean towards standardised contracts due to regulatory requirements and the involvement of public funds. While the literature does not extensively discuss the impact of supply chains on contract form selection, it recognises that complex supply chains may necessitate adaptable and collaborative contracts (Caldas & Sohmen, 2018).

7.2 Establishing details of the system used to select contract forms in Kuwait (Qualitative)

7.2.1 Standard form, PDS and Term of payment.

In summary, the literature, including studies by Gordon (2016) and Love et al. (2002), acknowledges the prevalence of design-bid-build project delivery systems in various construction markets. This aligns with the findings of Organisations B, C, and D. The study by Harness et al. (2008) highlights the importance of contract flexibility to accommodate project-specific needs, which resonates with the diverse range of contract forms in Organisation A. The quantitative data suggests that Organisation A is more adaptable and open to various contract forms and project delivery systems, aligning with the need for flexibility in accommodating project-specific requirements. Organisations B, C, and D adhere to CAPT forms and design-bid-build project delivery due to legal constraints, indicating that regulatory factors significantly influence contract form selection in Kuwait. Literature emphasises that the choice of contract form should align with the specific project requirements and complexities (Grimsey & Lewis, 2005). The diversity of options observed in Organisation A's practices supports this notion. Similarly, the consistent use of CAPT forms reflects how regulatory constraints can shape contract form selection (Assaf & Al-Hejji, 2006). The literature review also discusses the role of public-private partnerships (PPP) in



construction projects (Akintoye et al., 2003). Organization A's inclusion of BOOT as a PPP aligns with the literature's recognition of PPP as an alternative project delivery method. In summary, the literature review (Ashworth & Hogg, 2007; Smith, 2013) highlights the use of standard forms of contract in the construction industry. Organisations B, C, and D's utilisation of standard forms aligns with industry practices discussed in the literature. The survey results support the literature's assertion that organisations adapt their contract forms to project delivery methods (Smith, 2013). Organisation A's development of specific GCCs for different contract types reflects this adaptability and alignment with the literature's acknowledgement of tailoring contracts to project-specific requirements. The survey results demonstrate how CAPT forms can be limiting when accommodating diverse project delivery systems, a concern not uncommon in the literature (Harper & Molennar, 2014). The restricted use of turnkey and design-and-build approaches is consistent with the literature's emphasis on traditional design-bid-build methods in the construction industry. The survey highlights that Organisations B and C have embraced PPPs for specific projects, reflecting the literature's recognition of PPPs as an alternative project delivery method (Akintoye et al., 2003).

The survey findings emphasise that Kuwaiti organisations, particularly organisations B, C, and D, place a strong emphasis on having fixed documents, with minimal room for customisation in their tendering procedure documents. This practice aligns with the idea of standardised forms and contracts prevalent in construction literature, emphasising the benefits of clarity, consistency, and reduced ambiguity. However, it should be noted that the literature acknowledges the importance of adaptability and customisation in specific contexts (Odeh & Battaineh, 2022). One striking difference is the level of flexibility and customisation exercised by Organisation A, which stands in contrast to the literature's general emphasis on standardisation. While the literature recognises the need for adaptability, the extent to which Organisation A customises its contract forms and documents may not be as common in other contexts. This flexibility allows them to cater to project-specific requirements effectively. The survey highlights the CAPT system's role in Kuwaiti organisations, providing a structured framework for contract forms and documents. While this aligns with global practices such as the use of FIDIC forms (Love & Gunasekaran, 2019), it also indicates that Kuwaiti organisations have developed their own unique systems to streamline procurement



processes. This regional specificity may not always find an exact counterpart in the broader international construction literature.

7.2.2 Time and risk

These survey results indicate a unanimous preference among organisations (B, C and D) for employing standard domestic contracts, specifically the CAPT forms, in projects involving tight schedules and high levels of risk. This emphasis on standardised contract forms to manage time and risk aligns with the literature's recognition of the benefits of using standardised contracts in construction projects (Love & Gunasekaran, 2019; Beard et al., 2021). Standardised forms are known for their clarity, predictability, and established risk allocation mechanisms, which can expedite project timelines and mitigate risks (Chan et al., 2016). Organisations in the survey predominantly adhere to the design-bid-build delivery system and employ lump-sum payment terms, except for organisation B, which also utilises unit pricing for maintenance. These choices resonate with the conventional practices described in the literature (Chan et al., 2015). The literature acknowledges that design-bidbuild is a widely used project delivery method in the construction industry, particularly for public projects, as it allows for competitive bidding and cost control (Dahl et al., 2015). Likewise, lump-sum payment terms are common due to their simplicity and clarity (Fazio et al., 2018). A notable contrast emerges with Organisation A, which opts for more flexible contract forms like Fixed Price Lump Sum Level 1 or Lump Sum Turnkey when considering time and risk factors. This departure from standardised contracts aligns with the literature's emphasis on adaptability and customisation in certain contexts (Jones, 2019). The ability to tailor contract forms to specific project needs allows Organisation A to effectively manage time and risk in a manner that suits their requirements. This flexibility in contract forms reflects a more dynamic approach, potentially offering advantages in scenarios where project complexity or unique conditions demand tailored solutions.

7.2.3 Size and Sector

Organisations (B, C, and D) are required to use the standard domestic contract (CAPT) forms, regardless of whether the project is large and complex, large but not complex, small but complex, or small but simple, as well as whether the project is part of infrastructure or society (education, health, culture) or transportations (road, tunnel, bridge). Such



consistency is vital for organisations involved in diverse sectors, including infrastructure, education, health, culture, and transportation.

This alignment with CAPT forms indicates a lack of tailoring contract forms to the specific characteristics of projects, which resonates with the literature's emphasis on the importance of aligning contract forms with project attributes (Fisher, 2020). The uniformity of contract forms may simplify administrative processes but may not necessarily be the most efficient approach for projects with varying characteristics. Additionally, those organisations have used the lump sum for terms of payments and the design bid build for delivery system, with the exception of organisation B, which uses the lump sum and unit price for maintenance. This finding corresponds with the literature's discussion of the prevalence of lump-sum contracts in construction projects (Bunni, 2013). However, the literature review didn't delve into specific payment terms like unit pricing, which demonstrates the added value of the survey data in providing a more detailed understanding of payment practices.

Organisation A has been using Level 1 Design-Bid-Build as a delivery system and lump sum as a payment term, regardless of whether the project is related to infrastructure, transportation (road, tunnel, bridge), or society (education, health, culture). This approach is unique and suggests that Organisation A may prioritise simplicity and uniformity in its procurement practices, possibly to minimise complexity and enhance project management (Chan et al., 2018). Organisation A has various forms, as it briefly explains in sections A and B above. This variance aligns with the literature's recommendation for greater flexibility in contract forms to match project size and complexity (Chen et al., 2018). It demonstrates an understanding that one size does not fit all in the construction industry. The primary contrast observed in the data is between organisations B, C, and D, which rigidly adhere to standardised CAPT forms, and organisation A, which demonstrates a more adaptable approach. This contrast reflects a critical challenge in Kuwait's construction sector the need for greater flexibility in contract form selection to meet the diverse needs of projects. This issue has been highlighted in the literature, suggesting the importance of balancing standardisation and adaptability (Jones, 2019).

Furthermore, when the project is part of an investor (commercial, financial, or trade) organisation A does not have those types of projects, while organisation B and C have been using PPP contracts within their organisations. This finding reinforces the literature's discussion of PPPs as a viable funding mechanism for commercial projects (Francom et al.,



2016). Organisation C uses a BOT contract for their PPP projects, and Organisation D is not allowed to use those types of projects within their organisation which means that once they have PPP projects, they will prepare them under the authority of a public-private partnership.

7.2.4 Funding

As organisations B, C, and D use PPP contracts for those types of projects regardless of whether the project is privately funded or has a significant international funding component. This practice mirrors the literature's recognition that public-private partnerships (PPPs) have become a popular choice for financing and delivering large-scale projects (Akintoye et al., 2018). PPPs are known for their ability to attract private investment and share risks, making them suitable for diverse funding scenarios (Li et al., 2010). Moreover, Organisation A started using L. Sum Turnkey or BOOT as part of PPP contracts regardless of whether the project is privately funded or has a significant international funding component, and when the client wants specific suppliers for the project, they are unaware of this. This variation suggests that Organisation A is more adaptable in its funding approach, possibly influenced by the diverse nature of funding sources in PPP projects. This adaptability resonates with literature discussing the flexibility required in funding mechanisms for construction projects (Jones, 2019).

7.2.5 Responsibility

The result shows that CAPT law banding design build and turnkey organisations are not permitted to use any other types of delivery systems, hence, in certain circumstances, no forms, delivery systems, or payment terms can be utilised. Organisations (B, C, and D) are required to use the standard domestic contract (CAPT forms) as well as whether the client wants the contractor to be in charge of the design or whether the client prefers to stay out of the construction project supervision, whether the client wants to be responsible for the design or the client wants a consultant to be responsible for the design by using the lump sum for terms of payments and the design bid build for delivery system, with the exception of organisation B, which uses the lump sum and unit price. This strict adherence to standardised contracts aligns with the literature's emphasis on the importance of regulatory frameworks and standardised practices in ensuring fairness and transparency in construction procurement (Walker & Hampson, 2003). It's noteworthy that CAPT law restricts the use of



alternative delivery systems such as design-build and turnkey, reinforcing the regulatory constraints faced by these organisations (Lam et al., 2017).

In addition, the result shows that organisation A has more options for where to start when it comes to assigning responsibility. The analysis underscores the delicate balance that organisations must strike between accommodating client preferences and adhering to regulatory constraints. While Organisation A can tailor its approach to a greater extent, Organisations B, C, and D face limitations imposed by CAPT law. This highlights the importance of understanding and complying with sector-specific regulations and their implications for contract selection (Lam et al., 2018).

7.3 The (CAPT Observations)

CA-2's confirmation that most public organisations in Kuwait follow CAPT procedures and forms aligns with the literature's emphasis on the dominant role of standardised forms and procedures in the Kuwaiti construction industry (Chappel, 2008). This aligns with the findings that CAPT has established the Executive Regulations for Public Tenders Law, providing a standardised framework for public organisations. The assertion that CAPT forms are also available for use in the private sector, as reported by contractors, is consistent with the literature's emphasis on the use of standard forms in both public and private construction projects (Bunni, 2013). The visibility and clarity of CAPT forms contribute to their adoption in various sectors. CA-2's explanation of how CAPT mitigates the tendering process for small entities, allowing them to manage tenders independently, resonates with the findings that CAPT allows for flexibility within its framework to accommodate the unique needs of different projects (Francom et al., 2016). The mechanism of approvals before and after projects ensures compliance with regulations. The discussion on the effectiveness of contract forms in addressing delays due to banned delivery systems such as design-build or turnkey echoes the literature's emphasis on the importance of project-specific considerations in contract selection (Chan et al., 2015). The poor coordination cited as a reason for delays aligns with literature that highlights the need for strong coordination in non-traditional delivery systems (Lam et al., 2017). The mention of the flexibility provided by CAPT in allowing organisations to modify contracts for special or complex projects corresponds with the literature's recommendation of tailoring contracts to project-specific requirements (Fazio et al., 2018). This adaptability contributes to better project



management. CA-2's explanation that CAPT does not have specific forms for project classification resonates with the literature's findings that classification systems may not always align with contract forms (Gordon, 2016). The use of appendices to accommodate project-specific requirements is in line with international best practices for contract customisation.

While the interview provided valuable insights into CAPT's procedures and practices, it is worth noting that CA-2 did not identify any weaknesses in CAPT's system. This lack of selfcriticism contrasts with some of the identified gaps in the literature, such as the need for more diversified contract forms and better alignment between project classification and contract selection.



CHAPTER EIGHT

Conclusion, Achievements and Recommendations





8 Conclusion, achievements and Recommendations

This chapter presents the culmination of extensive research, analysis, and exploration into the intricacies of construction contracts in Kuwait. It is the place where the findings, implications, and contributions of this research are synthesised and expressed.

The findings are contextualised within the Kuwaiti construction industry and its broader socio-economic, legal, and cultural context. It emphasises the significance of the construction sector in Kuwait's ongoing development and progress, noting its substantial contribution to the national GDP. It underscores the role of various stakeholders, including government entities, contractors, and consultants, in shaping the industry's landscape.

The research objectives outlined at the inception of this study are brought to the forefront. These objectives include conducting a critical analysis of the existing system, developing a conceptual framework for best practices, and proposing strategies for improvement. As this chapter unfolds, it will revisit these objectives and provide an overview of how they have been met and advanced throughout the research process. This chapter's flow is guided by a logical sequence, commencing with a comprehensive discussion of research findings, followed by a conclusive summation. The recommendations section that follows will provide actionable strategies for industry stakeholders to implement, directly addressing the identified issues. The conclusion enables us to ascertain the extent to which our research objectives have been achieved and provides a comprehensive view of the existing practices and their implications.

8.1 Research Background

At the outset of this research journey, the construction projects in Kuwait faced a pronounced gap in the existing literature concerning the nuanced processes involved in selecting standard contract forms for construction projects. While the broader field of construction management literature provided foundational theories and concepts, the contextual application of these frameworks within the Kuwaiti public sector remained a relatively underexplored terrain. The literature review highlighted the importance of aligning contract forms with project characteristics, organisational goals, and contextual factors. However, the specificity of Kuwait's construction industry, its unique socio-economic landscape, and the regulatory frameworks governing public sector projects necessitated a dedicated exploration. The theoretical underpinning of the research rested on key



frameworks, most prominently contingency theory and transaction cost economics. The contingency theory posits that organisational practices, including the process of contract form selection, should align with the specificities of the external environment. This resonated with the overarching theme of understanding how project characteristics influenced by time, risk, size, funding, sector, and responsibility—interact with the choice of standard contract forms. Transaction cost economics provided insights into the economic rationale behind contract selection, emphasising the minimisation of transaction costs.

The overarching aim of the PhD research was to significantly advance the understanding of the processes of contract form selection in Kuwait's construction industry. The objectives were multifaceted. Firstly, the study sought to provide a holistic view of the factors influencing contract choices by combining quantitative and qualitative insights. Secondly, it aimed to unravel the diverse practices observed across organisations, contributing to a nuanced comprehension of the intricacies shaping contract selection. The focus on Organisations A, B, C, and D aimed to capture a representative cross-section of the industry, ensuring a comprehensive analysis. The research aimed to address critical gaps in the existing literature. While foundational theories existed, their contextual application within Kuwait's public sector was notably deficient. The study endeavoured to bridge this gap by offering a detailed examination of the standard forms selected for Kuwaiti construction projects. The lack of detailed insights into the specificities of standard forms created a void in understanding how construction projects in Kuwait navigated contractual frameworks. By investigating the layers of standard form selection, the research sought to fill this void.

The PhD research aspired to develop a substantial influence on the construction management field. The revelations within this study surpassed generic insights provided by existing literature, offering a comprehensive analysis of the specific forms preferred, the rationale behind their selection, and the contextual factors influencing these decisions. This newfound understanding extended to the intricate interplay between project characteristics, funding sources, and organisational structures, providing a holistic view of the Kuwaiti construction environment. The research aimed to serve as a valuable resource for practitioners, policymakers, and researchers operating in contexts with similar complexities.



8.2 Achievement of the Research Aim and Objectives

A mixed-methods research method was used to attain the research aim and objectives. This involved the use ofsemi-structured interviews (n=11) and a survey questionnaire (n=92). Data obtained from the questionnaires was analysed using content analysis, univariate statistics and descriptive statistics to create a wider understanding of the circumstances and acquire perceptions of the Kuwait public sector construction industry. Content analysis and thematic analysis were applied in analysing data from the interviews, developing a comprehensive understanding of the present practices in project management in Kuwait's public sector construction projects, and fverifying of the relationship between the selection of contract forms and the industry's performance in terms of funding, responsibility, sector, time, and size. Additionally, there was the development of a cohesive framework for selecting contract forms to tackle the challenges, assess the methods used in selecting contract forms as established from the opinions of the experts, provide recommendations according to best practices, and offer guidance for more research. The subsequent sections will explain the way in which these steps attained the objectives of the research. The next sections explain the practical and theoretical knowledge contributions. Lastly, the study's limitations and recommendations for more research are provided.

8.2.1 Objective 1: Critical analysis of the current system for selection of contract forms in construction projects in Kuwait.

In reviewing the literature, the construction project phases and the contract form selection phases in the Construction Sector in Kuwait Overview. The current system used in selecting contract forms in Kuwait is based on criteria such as time or speed, quality, size or sector, type, responsibility, and funding. Additionally, prior studies on construction contract selection in Kuwait have been investigated.

The performance of construction in Kuwait was affected by several contractual issues due to the limited use of standard forms, a project delivery system and payment terms. The effectiveness of contractual issues such as delays, termination, variation orders, and disputes has been reviewed.

The literature review has revealed a diverse range of strategies for selecting construction contracts, with a particular focus on Kuwait's construction sector. Researchers have emphasised that the choice of contract type and procurement method significantly impacts



project outcomes, including cost, quality, schedule adherence, and risk allocation. Historically, Kuwait's construction sector primarily followed traditional lump-sum contracts (Chakravarty & Macleod, 2016). However, a shift towards more strategic contract selection approaches has been observed, driven by the need to reduce disputes and inefficiencies. The international construction industry relies on different organisations, each offering unique approaches to construction contract selection. The JCT from the UK, the AIA, and the FIDIC are prominent players in this regard. These organisations provide standardised contract forms tailored to diverse project types, emphasising risk allocation, transparency, and dispute resolution mechanisms. They cater to both simple and complex projects, from design-bid-build to design-build and turnkey contracts. The AIA stands out for its commitment to customisation and clarity, promoting fairness and equity among project stakeholders (Chen et al., 2018). The FIDIC suite of contract forms is globally recognised and widely used in major international projects, offering a balanced allocation of risks among contracting parties. FIDIC offers clear and well-defined contracts designed for risk reduction and efficient project management, and JCT offers a range of standardised contract forms tailored to different project types, emphasising the clarity and established legal precedents in its contracts. The literature underscores the need for customisation in standardised contract forms to align with Kuwait's unique context. While standardised contracts provide a strong foundation, customisation is essential to ensure they meet the specific requirements of Kuwait's construction sector (Godwin, 2020). The JCT, AIA, and FIDIC offer degrees of flexibility and customisation, allowing adjustments to contract clauses and provisions to accommodate local legal and cultural nuances.

The literature review revealed several critical aspects related to contract form selection in construction projects, which served as a foundation for the development of the new framework. Historically, Kuwait's approach to contract form selection leaned heavily towards selecting the contractor with the lowest tender price. The literature suggested that this approach, while economically advantageous, may not always align with other project-specific factors such as technical complexity, quality, and timeliness. This approach aimed at cost efficiency but sometimes fell short in addressing project-specific requirements. The literature highlighted that the previous methodology predominantly focused on financial aspects and payment terms, often overlooking technical intricacies and project-specific requirements.



selected contract form and the project's unique characteristics, affecting the overall success of construction projects. The Central Agency for Public Tenders played an important role in standardising contract forms. These standardised forms, developed collaboratively with various public sector organisations, have promoted transparency, consistency, and understanding in the contract documents. The literature recognises the value of this standardisation. The existing methodology lacked a systematic framework for selecting contract forms that comprehensively addressed various project aspects. The proposed framework encourages a more balanced approach to contract form selection. It advocates for the inclusion of additional factors, such as technical aspects, quality, project complexity, size, and time requirements. This approach aims to ensure that the selected contract forms align better with the unique characteristics of each project. While the historical methodology favoured cost-efficiency, the new framework emphasises the need for a more systematic approach to consider a broader range of variables. It recognises that contract forms should be selected based on a project's specific requirements rather than focusing solely on cost. Furthermore, the influence of CAPT in standardising contract forms aligns with the proposed framework's emphasis on standardisation. The framework builds upon this foundation, incorporating flexibility to consider project-specific aspects.

The literature emphasises that external factors significantly affect contract selection. Factors such as project nature, client control, accountability, contractor appointment, final cost certainty, project duration, limitations, construction changes, risk assessment, and supply chain relationships play pivotal roles. Project nature, risk assessment, final cost certainty, and project duration are particularly essential considerations (Harness et al., 2008). Different projects may require contract forms tailored to their size, type, and technical requirements. The level of client control and the degree of accountability also vary among contract forms. The choice between traditional and alternative procurement methods should align with project-specific requirements and objectives, emphasising the need for flexibility in contract selection. The literature highlights the complex legal and regulatory environment in Kuwait's construction sector. It is essential for contractors and project owners to stay updated on legal developments and ensure compliance (Harper & Molenaar, 2014). Kuwait's intricate regulatory environment poses challenges to navigating legal compliance. Non-compliance can lead to delays, disputes, and legal complications, underscoring the need for meticulous contract selection. Researchers have emphasised that construction firms should conduct



thorough risk assessments to identify potential challenges and uncertainties associated with different contract types.

The result was that there are limitations for using contract forms in Kuwait, and the most significant point was that the level of understanding of the process method to select the contract forms in Kuwait was poor. The data revealed a widespread sentiment among industry professionals that the existing system for selecting contract forms for Kuwait's construction projects lacks clarity and transparency. Respondents indicated that the current system does not adequately address the diverse needs of various project types and sectors, often leading to confusion during the project execution phase. The data indicated that the complexity of the existing contract forms is a significant concern. Respondents expressed difficulties in understanding and applying these forms due to their intricate nature. This complexity was found to contribute to disputes and delays in project execution, further emphasising the need for critical analysis. A notable disparity was found in the perception of the existing system between the public and private sectors. Professionals in the private sector tended to be more critical of the current system, emphasising the need for reforms and improved alignment between the sectors, which is a crucial aspect of this objective. The lack of clarity and consistency in contract forms was a prevalent concern among respondents. The majority of professionals agreed that enhancing clarity and standardising contract forms would significantly improve the existing system. The results indicated that structured decision-making tools, like MCDM methods, are underutilised in the selection of contract forms. The interviewees disclosed that systematic, criteria-based frameworks are not routinely applied in the decision-making process, leading to less-informed choices regarding contract forms. A significant proportion of the surveyed professionals acknowledged that the preferences of various stakeholders, including project owners and consultants, exert substantial influence on the selection of contract forms. 30% of the participants indicated that the choice of contract form was primarily influenced by internal organisational guidelines, while some respondents mentioned legal regulations.

The qualitative data, gathered through structured interviews with professionals in Kuwait's construction industry, has provided valuable insights into the existing system for selecting contract forms for construction projects. The findings reveal that there are primarily two different approaches utilised in Kuwait. Some organisations employ a diverse array of contract forms, while others tend to limit their selection based on the guidelines established



by the Central Agency for Public Tenders (CAPT). Notably, these systems do not incorporate essential classifications of the project to select the suitable type of contract related to size, nature of the project, statement of project, sector, responsibilities, and funding sources. This existing system for contract selection has contributed to a notable increase in the number of contractual issues in Kuwait's construction projects. These findings underscore the substantial influence of various stakeholders, including project owners, consultants, and contractors, in shaping the choice of contract forms. However, it highlights that the current system often lacks an objective, standardised approach. The interviews emphasise the complexity of the decision-making process associated with contract form selection. Professionals acknowledged that this decision is contingent upon a range of project-specific factors, including its size, complexity, inherent risks, and unique requirements. This complexity can lead to variations from one project to another, resulting in a lack of uniformity across different projects. The data also underscores the pivotal role played by Kuwait's legal framework, particularly the regulations established by CAPT, in determining the appropriate contract forms. Deviating from these regulations may lead to legal disputes and complications during project execution. An important observation from these interviews is the absence of formalised processes within the current system for contract form selection. Decision-making predominantly relies on historical practices, individual judgement, and project-specific considerations. This lack of standardised procedures can lead to inconsistency in the approach to contract form selection. The data reflects a common desire among industry professionals for more comprehensive guidelines and decision-making support. Professionals expressed a need for accessible resources and tools that can facilitate a more systematic and informed approach to contract form selection. While the current approach is often pragmatic, it is perceived as lacking a structured foundation. In conclusion, the qualitative data brings to light the intricate dynamics involved in selecting contract forms for construction projects in Kuwait. These insights underscore the need for a more standardised and objective approach that can contribute to a more consistent and effective contract selection process in the future.



8.2.2 Objective 2: The development of a conceptual framework on best practices for contract form selection.

The review introduces key theoretical frameworks that underpin construction contract selection strategies. Agency Theory emphasises the relationship between project owners and contractors, particularly regarding moral hazards and information asymmetry (Chappell, 2019). Real Options Theory has gained traction in construction management for its ability to account for uncertainty and flexibility in decision-making. The review underscores the significance of procurement methods in contract selection. Traditional procurement methods, such as DBB, are prevalent in the construction industry, promoting cost efficiency. However, alternative procurement methods, such as design-build and construction management, have gained popularity, offering advantages like faster project delivery and enhanced collaboration (Chappee, 2008). Sustainable procurement methods have also been explored, aligning contract selection with Kuwait's sustainability goals. The review presents valuable insights from case studies conducted in Kuwait's construction sector. The literature review introduced MCDM methodologies such as the AHP, TOPSIS, and ELECTRE. These methods offer structured approaches to assess and prioritise criteria for construction contract selection. Researchers have highlighted the adaptability of AHP for evaluating diverse criteria, including cost, quality, and risk. However, it may oversimplify complex decision-making. TOPSIS offers a way to find the contract form closest to the ideal solution based on multiple criteria, but it may require substantial data, which could be a challenge in Kuwait's construction context (Darko et al., 2019). ELECTRE focuses on outranking relationships among criteria but may be complex and sensitive to parameter settings.

The survey reveals that the Kuwaiti domestic contract form is the most widely used standard form of contract in the construction industry, followed by FIDIC. This reflects the dominance of local contract forms in the construction sector and aligns with the existing methodology, which prioritises standardised domestic contracts. The proposed framework acknowledges this preference but seeks to add flexibility to adapt to varying project needs. The majority of respondents favour the traditional project delivery method. This method involves a sequential approach, with design preceding construction. This preference aligns with the existing practices in Kuwait's construction sector, which have historically followed conventional approaches. The new framework does not discourage traditional methods but encourages consideration of alternative project delivery methods when appropriate. This


flexibility is in line with international best practices. The survey investigates whether various factors, such as the form of payment, project size, project type, and system of delivery, significantly influence the choice of standard contract forms. The results suggest that, apart from the form of payment (lump sum), the other variables do not strongly impact the selection of contract forms. Lump sum implies that contractors receive a fixed sum for their services, regardless of the final project cost. This highlights the need for a more comprehensive approach, as suggested by the new framework. The proposed framework promotes the consideration of a wider range of factors, such as technical aspects, project size, quality requirements, and project-specific needs, to ensure a better fit between the contract form and the project. The survey findings reflect the industry's inclination towards standardised approaches. The proposed framework respects this standardisation while introducing flexibility to consider project-specific elements. This balance is intended to improve contract form selection while maintaining clarity and consistency. The majority of survey participants had substantial experience, with over 30 years in their respective fields. They demonstrated a high level of expertise in the construction industry. Respondents represented diverse sectors within the industry, with housing and major construction being particularly prominent. Despite the experience of many participants, there were challenges in their knowledge of the system used for selecting contract forms. Notably, contract specialists and project managers, despite their experience, lacked a comprehensive understanding of the selection process. This underscores the need for further investigation, especially into the specific practices of various sectors. The knowledge gaps in contract specialists and project managers highlight a need for better education and awareness regarding the contract form selection process. The proposed framework can address this issue by providing guidelines and training resources.

The interviews with personnel from CAPT revealed a predominant emphasis on procedural aspects over technical considerations in the selection of contract forms. This indicates that the current system focuses more on the process of procurement than tailoring the contract to the technical requirements of specific projects. CAPT acknowledged the use of temporary solutions to address specific project needs. In particular, they mentioned the addition of Appendix 6.1 (during tender preparation) and Appendix 6.2 (after the preliminary meeting) for special or complex projects. These temporary measures aimed to address specific project requirements that were not adequately covered by the existing system. The use of



temporary solutions in the form of appendices highlights an area where the existing system lacks flexibility and adaptability. The proposed framework promotes a systematic approach that doesn't rely on temporary fixes but rather strives to provide a more adaptable and comprehensive solution from the outset. There was a recognition among interviewees that the existing system needed to be further developed to consider broader project aspects, such as time, size, and quality. This highlighted the need for a more comprehensive and integrated system for selecting contract forms that considers both procedural and technical requirements. The new framework aims to introduce a more balanced approach by considering both procedural and technical aspects, ensuring that the selected contract forms align better with the project's unique needs. The proposed system additionally incorporates modern technology to streamline the contract form selection process. This includes elements related to project management and data analysis to make more informed decisions.

8.2.3 Objective 3: Propose and validate strategies for improving contract form selection practice in Kuwait.

The literature review offered a foundational understanding of strategies for improving contract form selection practices. It emphasised the importance of standardisation and the development of clear guidelines for selecting contract forms. Standardisation promotes consistency, reduces ambiguity, and facilitates the decision-making process (Medineckiene et al., 2015). Encouraging private sector organisations to align with the standardised contract forms utilised by the public sector is a recommended strategy. This alignment can help bridge gaps and discrepancies between the two sectors, fostering uniformity and improving the quality of contracts in the construction industry. Furthermore, the literature highlighted the significance of training and education programmes for professionals involved in contract form selection. By providing individuals with the necessary knowledge and skills, organisations can ensure that their teams are well-equipped to make informed decisions (Myeong et al., 2015). Another key aspect addressed in the literature is the need for clear risk allocation. Effective strategies should entail a transparent assignment of risks to the party best equipped to manage them. This minimises disputes and enhances project outcomes. Additionally, the literature points out the need for revising thresholds for direct contracting in the public sector. By establishing clear and justifiable thresholds, Kuwait can



ensure that only projects meeting specific criteria are subjected to this method (Surahyo, 2017). This enhances transparency and competition in contract form selection. To address challenges with Design and Build or Turnkey systems, streamlining approval processes is vital. Creating efficient coordination mechanisms among government departments and other stakeholders. The literature acknowledges the importance of flexibility in contract forms. Allowing public-sector organisations to modify contracts through appendices to accommodate the unique requirements of complex or special projects is a valuable strategy. This adaptability ensures that contract forms align with the specific needs of diverse construction projects, which can expedite the contract selection process, reducing delays and associated costs.

After reviewing the literature strategies needed to improve contract form selection practice in Kuwait and the conceptual framework of contract selection for construction projects in Kuwait, interviews were conducted to gather more information about selecting contract forms base criteria by using the analytic hierarchy process (AHP) method under Multi-criteria decision making (MCDM). This enabled the researcher to develop the existing system by selecting the suitable type of contract base on the nature of the project, classifying the project, the type of project or sector and the situation of the public sector in Kuwait. This framework was verified through structured interviews in order to update and generate the final version that could be applied to the construction industry in Kuwait in three phases. Begin with qualifying the employer to increase their knowledge about contract selection and key different contract types, while phase two applies and uses the existing process method of organisation (A) to select the contract forms due to having more options and having enough knowledge about this system, which can improve the governmental sector in Kuwait and decrease the effectiveness of contractual issues in Kuwait. This phase will be applied as temporary phase. The final phase will be the application of the conceptual framework (new framework) for the long term to ensure the improvement of performance for the construction projects in Kuwait, mitigate the weaknesses of the existing system, and develop the strength points of the existing system used in construction projects in Kuwait. In the validation process, generalisation was achieved using five different participants, four of whom were from different local organisations and were previously involved and the fifth was a judicial engineering expert with experience in dispute resolution in Kuwait. These experts contributed their practical insights and experiences to validate the proposed strategies and



framework. These structured interviews provided an opportunity to further refine the proposed framework. The experts' feedback and validation offered a practical perspective on the strategies and ensured that the framework was well-grounded in the local context. One key insight from the interviews was the significant role played by Kuwait's Central Agency for Public Tenders (CAPT) in offering standardised contract forms for various types of projects. These standardised forms were developed collaboratively with input from various public sector organisations, enhancing their credibility and suitability for public sector use. The consensus among the experts was that the utilisation of these standardised contract forms, as promoted by CAPT, is a promising strategy. These standardised forms contribute to increased consistency, transparency, and mutual understanding of contract documents. Encouraging both public and private sector organisations to adopt these standardised forms can lead to improved contract form selection processes. However, it's worth noting that there was a difference in perspectives regarding the extent of private sector adoption of CAPT's standard forms. While some experts mentioned the potential use of these forms by private organisations based on hearsay, there was a lack of specific information regarding their private sector adoption. This disparity highlights a potential research gap in understanding the private sector's engagement with standardised contract forms in Kuwait. Furthermore, the interview results shed light on the direct contracting threshold for government agencies, as outlined in Article No. 39 of the Tenders Law. While direct contracting is permitted for certain projects, it was evident that this practice raised concerns among construction professionals. These concerns primarily revolved around the need for enhanced project transparency and the protection of public funds. In conclusion, the qualitative data from industry professionals has reaffirmed the significance of standardised contract forms in Kuwait and their potential to enhance the contract selection process. The data has also indicated a need for further research into the extent of private sector adoption of these standardised forms. Additionally, the concerns raised regarding direct contracting emphasise the importance of maintaining transparency and safeguarding public resources in government procurement practices.

The quantitative data analysis provided valuable insights into the current state of contract form selection practices in Kuwait. It reflected the perspectives of professionals in the field and their recognition of critical aspects. Notably, the quantitative findings aligned with the literature by confirming the significance of project-specific factors and the necessity of legal



compliance. It also emphasised the challenges associated with risk allocation and the need for stakeholder collaboration, transparency, accountability, and education. Survey respondents demonstrated a consensus on the usefulness of standardised templates and guidelines for selecting contract forms. This alignment indicates a clear preference for structured decision-making processes. Additionally, the validation data pointed out that the experts have agreed that applying a new system will ensure improving the performance of construction projects in Kuwait, as well as mitigating the weaknesses and building on the strengths of the current system. Also, the employers who will deal with contracts need to prequalify, understand the key differences between each type of contract, and deal with it. This finding suggests that applying the strategy in stages plays a significant role in improving practice.

8.3 Contribution to Knowledge and Practice

This research carries significant contributions to knowledge and practice in the construction project field, particularly in the context of Kuwait. The country's commitment to the Kuwait 2035 vision has underscored the importance of enhancing the construction industry's performance. It's worth noting that the public sector has played a pivotal role in supporting this research through the researcher's postgraduate degree. The central contribution of this study lies in the development of a comprehensive strategy-framework designed for the selection of contract forms within the public sector in Kuwait. This framework is poised to substantially increase understanding of contract forms and the critical distinctions between them. The process method for selecting contract forms comprises three distinct phases: first, the pre-qualification of employers; second, the temporary system implementation, followed by the application of the long-term conceptual framework (new framework). The framework not only aids public organisations but also benefits the private sector by facilitating the selection of the most suitable contract forms based on project type, classification, sector, and project nature. Moreover, the framework is instrumental in averting and reducing the occurrence of contractual issues, thus contributing to the overall improved performance of construction projects in Kuwait. By doing so, it bridges the knowledge gap within the current method used for contract form selection. The strategy encompasses a wide array of approaches, such as theoretical frameworks, legal frameworks, risk management, agency theory, real option theory, and Multicriteria Decision Making (MCDM) techniques, along with internationally recognised organisational approaches like JCT, FIDIC, and AIA. On the



practical front, this research is poised to significantly influence the development of Kuwait's construction industry by introducing modernised approaches and advanced processes for contract form selection that have been tried and tested globally. Organisations like JCT, AIA, and FIDIC are already being implemented in many developed countries. This study, therefore, aligns with Kuwait's vision for the construction industry by introducing innovative methods that can be integrated into the existing system. The multi-tool and criteria-based approach for selecting contract forms is a critical aspect of the proposed methodology, ensuring that the performance of construction projects within the public sector in Kuwait is enhanced. The research has resulted in the development and validation of a conceptual framework for contract form selection in Kuwait's construction industry. This framework offers a structured approach that takes into consideration the project's nature, classification, sector, and the specific conditions of the public sector. This framework contributes to the theoretical underpinning of contract form selection and offers practical guidance for industry professionals. The research also holds potential for impacting policies and regulations related to contract form selection in Kuwait. Government bodies and regulatory authorities can benefit from the insights and recommendations to refine and enhance their policies, ultimately improving the efficiency and effectiveness of public construction projects.

In the context of Kuwait, using the real option approach with Multi-criteria Decision Making (MCDM) techniques for selecting contract forms is a critical aspect of the proposed methodology, ensuring that the performance of construction projects within the public sector in Kuwait is enhanced. The research has resulted in the development and validation of a conceptual framework for contract form selection in Kuwait's construction industry. This framework offers a structured approach that takes into consideration the project's nature, classification, sector, and the specific conditions of the public sector. This framework contributes to the theoretical underpinning of contract form selection and offers practical guidance for industry professionals. The research also holds potential for impacting policy and regulations related to contract form selection in Kuwait. Government bodies and regulatory authorities can benefit from the insights and recommendations to refine and enhance their policies, ultimately improving the efficiency and effectiveness of public construction projects.

Additionally, from a global perspective, the development of this contract form selection framework can serve as a benchmark and a valuable reference for other countries seeking



to modernise and streamline their construction industry practices. By sharing its knowledge and implementing a well-defined and comprehensive framework, Kuwait can serve as an example for others looking to enhance their construction project management processes. This can contribute to the global advancement and harmonisation of best practices in the construction field. The insights and strategies developed within this study transcend geographical boundaries. The challenges and complexities associated with selecting contract forms are not unique to Kuwait but resonate with construction projects worldwide. As such, the proposed strategy framework and the underlying theories and methodologies have broader applicability. Furthermore, this research fosters a deeper understanding of the implications of contract form selection in construction projects. These insights can stimulate global debates and discussions on best practices, risk management, and performance improvement in the construction sector. By providing a comprehensive framework, this research contributes to the development of a global dialogue on how to enhance construction project management practices. This research also contributes to academic discourse by shedding light on a crucial aspect of construction project management. It can serve as a foundation for further academic investigations, debates, and discussions related to contract form selection and its implications. The insights, findings, and strategies presented within this study offer a wealth of material for scholars, researchers, and academicians to build upon. The nuances of contract form selection in the construction industry in Kuwait, as uncovered by this research, can provide a solid foundation for further exploration and analysis. It opens up avenues for future research projects aimed at delving deeper into the various aspects of construction project management. The proposed strategy framework and its underpinning theories and methods can serve as a point of reference and comparison for future academic investigations. By establishing a robust methodology for selecting contract forms, this research contributes to the creation of a benchmark against which other scholars can measure their work. It offers a platform for debate and discourse, fostering an environment of critical thinking and knowledge sharing in the academic community. While the focus of this research is primarily on the construction industry in Kuwait, the methodologies, frameworks, and theoretical underpinnings developed in this study hold significant potential for international implications. One key aspect is the development of a comprehensive strategy framework for the selection of contract forms within the construction sector. This framework, tailored to the unique needs and dynamics



of Kuwait, can serve as a model for other countries looking to enhance their construction project management practices. By adapting the principles and methodologies outlined in this framework, countries with similar economic and developmental contexts can modernise their approach to contract selection, thereby improving the efficiency and effectiveness of their construction projects. Moreover, the incorporation of diverse theoretical frameworks such as real options theory, agency theory, and multicriteria decision-making techniques provides a robust theoretical foundation that transcends geographical boundaries. These theories offer universal insights into decision-making processes, risk management, and performance improvement, which are applicable to construction projects worldwide. Furthermore, the insights generated from this study contribute to the global discourse on best practices in construction project management. By shedding light on the complexities and challenges associated with contract form selection, this research stimulates critical discussions that are relevant beyond the borders of Kuwait. The proposed strategy framework offers a structured approach that can be adapted and customised to suit the needs of different countries and regions, thus facilitating the adoption of modernised practices in the global construction industry.

8.4 Limitations of the Research and Recommendations for Further Research

The realm of public sector construction projects in Kuwait is vast and intricate, encompassing numerous authorities, stakeholders, departments, and diverse practices. In the context of a single study, it is simply unfeasible to comprehensively address every facet of this multifaceted sector. This research, therefore, has been intentionally delimited to focus primarily on client organisations engaged in public-sector construction projects. Notably, these organisations include influential bodies such as the Ministry of Public Works, Kuwait Oil Company, the Public Authority of Industry, and the Public Authority of Housing and Welfare, which oversee a spectrum of projects spanning from critical infrastructure development to various governmental initiatives. The core objective of this study has been to introduce a holistic framework and process protocol aimed at enhancing the performance of Kuwait's construction project landscape. The emphasis has revolved around innovating the existing contract form selection system. This research has effectively met its defined objectives. However, as is the case with any study, it is essential to recognise its inherent



limitations. These constraints are elucidated below and accompanied by recommendations for future research:

- One of the primary limitations of this study stemmed from time constraints and the accessibility of potentially confidential data from diverse organisational departments. While every effort was made to obtain comprehensive data, certain participants hesitated to share specific information. Language barriers may have also influenced the transmission of certain data and the use of software tools. It is recommended that future research endeavours invest more time and resources in overcoming these limitations.
- The generalisability of the developed process protocol and framework is naturally
 restricted to the context in which it was created, which is Kuwait's construction
 project landscape. To bolster the utility and relevance of this framework on a global
 scale, further research is advisable. This could involve assessing the applicability of
 the framework in diverse international contexts, thereby identifying both similarities
 and distinctions.
- While this study employed a mixed-methods research approach, combining questionnaires and interviews to collect primary data, there is room for methodological diversification. Future research initiatives might consider implementing alternative strategies, such as action research. This could facilitate the evaluation of the framework's real-world implementation and its readiness for application within the current Kuwaiti construction project context. The overarching goal here would be to enhance contract selection management and reduce the incidence of contractual issues associated with different types of contracts.
- This research, by design, focused on the development of a generalised system for contract form selection within the Kuwaiti construction project sector. Subsequent research initiatives could delve into the nuances of Public-Private Partnership (PPP) projects. This would involve a more specialised investigation into the intricacies of this project type, potentially uncovering unique insights and practices that are distinct from traditional government projects.
- This research predominantly concentrated on public facilities and government projects. Future research could extend its purview to encompass a broader spectrum



of project types, including specialised domains such as military infrastructure, hospitality projects, and educational institutions. This diversification would provide a more comprehensive understanding of the variations in contract form selection strategies across different project categories.

- The focus of this research has predominantly been on public construction organisations in Kuwait. To gain a comprehensive perspective, future research could investigate the same subject within the private sector. This comparative approach would offer invaluable insights into the similarities and discrepancies in contract form selection practices between the public and private domains.
- Emerging research in recent years has highlighted the potential application of artificial intelligence in optimising contract selection processes, particularly through the development of smart contracts. Incorporating AI technologies into contract form selection processes could revolutionise decision-making, offering enhanced efficiency, accuracy, and adaptability. Future research endeavours should explore the integration of AI algorithms and machine learning techniques to develop smart contract selection systems tailored to the complexities of construction projects. This would not only address current limitations but also pave the way for innovative advancements in contract management within the construction industry.



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Appendices



10 Appendices

10.1 Appendix (International organization approaches)

Appendix (A)	AIA Organization Approach	Size
Contract type	Description	JIZC
Conventional (A201) Family	Its suitability in orthodox delivery of design build contracts makes this the most common family of documents	Small to Large projects
Construction Manager as Adviser (CMa) Family	This approach improves the expertise level applied to project management a project from beginning to end. It ensures preservation of the CMa's independent judgment. This protects them from monetary influence with regards to the materials and labor used on site.	Small to large public and private sector projects
Construction Manager as Constructor (CMc) Family	In this approach, the construction manager's and contractor's functions are fused together and delegated to a single entity that may fail to give an assured maximum price. The entity takes control over construction activities using direct contracts made with the subcontractors.	Small to large private sector projects
Design-Build Family	Design-Build Family Here, the owner agrees on a contract with a design cum builder. He/she is tasked with designing and constructing the entire project. They agree on a contract with contractors and architects according to the needs of the project.	
Integrated Project Delivery (IPD) Family Transitional Forms	AlA offers agreements for a number of levels of project execution. The agreement models <i>Transitional Forms</i> after prevailing agreements with the construction manager. They also provide an easy first step into integrated project delivery. <i>Multi-Party Agreement</i> refers to an agreement that enables parties to design and construct a project while implementing integrated project delivery. <i>Single Purpose Entity (SPE)</i> generates a limited liability company that is used to plan, design and construct a project. It enables total reward and risk sharing in a completely incorporated collaborative procedure.	Large private sector commercial projects
Interiors Family	Interiors family documents obtain FF&E under a different contract from design services. This maintains the architect's individuality, freeing them from financial interest in the event of goods sale. AIA Document B152 could be used as an agreement for the owner/architect in designing architectural interiors and FF&E	Small to large Tenant projects
	However, the AIA Document B153 should not be used for construction activities, for example, major tenant improvements, It is used in designing services associated with FF&E	



International	United States' Architects do not have licenses in the countries where a project is sites; therefore, these agreements identify				
Family	the architects as consultants instead of their original profession.	projects			
Program Management	This approach improves the expertise level that is applied in project management from beginning to end.	Large			
Family		projects			
Small Projects Family	This is a family catering for residential projects; small commercial projects, or others that do not cost a lot and take relatively	Small			
	less time than large projects	projects			
	AIA Document C106 creates a provision for provides a licensing agreement for transmitting digital data when omitted from	Small to large			
Digital Practice	the prime agreement. It is an agreement exhibit that institutes the parties' hopes for digital data and building information modeling use on a project. It also sets the process used to develop detailed protocols that govern the building information	projects			
Documents	modeling and digital data use Once the parties reach an agreement, the relevant procedures and protocols are set forth in AIA Documents G201, Project Building Information Modeling Protocol Form, Project Digital Data Protocol Form, and G202,				
Contract	There are a number of forms in this family; information requests, qualification statements, bonds, change orders, directives	Small to large			
Administration & Project Management	to change construction, certificates and payment applications	projects			
Forms					

Appendix (B) Type of project	FIDIC Organization Approach Definition	FIDIC BOOK
Relatively small value, short construction time or involving simple or repetitive work	 Supposing the contract price is small, for instance, below US\$ 500,000, or construction takes a short period, under 6 months, or the work consists of non-complex and repetitive – dredging is recommended. The origin of the design is not a concern. The project is allowed to include electrical, mechanical or any of the rest of engineering works. 	New FIDIC Book
	If a Designer is:	Red Book lump sums



Larger or more complex projects	 Employer (or the Engineer); Similar to traditional projects, for instance hydropower projects., the Employer was tasked with the majority of the design (<u>Design Bid Build</u> 	Yellow Book and Orange Book
	 Contractor; this is similar to traditional projects, for instance mechanical or electrical works, inclusive of erection on site) <u>Design and Build</u> 	lump sum
	3. <i>Privately Financed (or Public/Private Financed);</i> the Concessionaire (the "Employer") is expected to have be in contract with the Contractor, This is abbreviated as EPC (Engineer, Procure, Construct) Contract, where it is the sole responsibility of the contractor to design and construct the infrastructure, it is also expected that the contract price agreed upon is not subject to an increase <u>Design operate transfer</u>	EPC/Turnkey Projects
	If the project is:	
Also for the EPC/Turnkey	2. Process Plant or a Power Plant; Here, the employer is responsible for financing a fixed price for project.	
Contract	3. Infrastructure Project: (This could be a water-way, roadway, railway or bridge) whereby the employer supplies the finance and expects implementation of the project on a fixed price basis. Aka the Turnkey basis.	EPC/Turnkey Contract
	4. Building Project; the employer expects completion of a building project which includes the fitting equipment and furniture but all according to a pre-set price that cannot be changed.	
	A choice has to be made between A1, B1, B2, C1 or C3.	New FIDIC Book
Reconstruction or	A1. This is where the contract price is small, for instance below \$ 500,000, or construction takes a short time, not more than 6 months, or the work consists of comparatively repetitive or straightforward tasks	Red Book lump
Refurbishment or another type of Project	B1. Employer (or the Engineer); This is also the case in traditional projects, for example hydropower projects, the employer performs majority of the design work. <u>Design Bid Build</u>	sums
	B2. Contractor: Similar to traditional projects, (this includes mechanical and electrical works and also site erection) <u>Design</u> and Build	Yellow Book and
	C1. Process Plant or a Power Plant; the employer finances the project and expects implementation on a fixed price basis.	Orange Book lump sum
	C.3 Building Project; The Employer has construction of building(s) on a Fixed-Price Turnkey Basis. This is inclusive of the equipment, fittings and furniture.	EPC/Turnkey Contract
		<u> </u>



Appendix (C)	JCT Organization Approach
Procurement methods	Contract type and appropriateness for use
	a. Standard Building Contract with Quantities (SBC/Q)
	for bigger works designed and/or detailed by or in the best interests of the Employer
	b. Standard Building Contract Without Quantities (SBC/XQ)
	for bigger works designed and/or detailed by or in the best interests of the Employer
	c. Intermediate Building Contract (IC)
	Here, the planned building works have non-complex content, and they comprise the normal work in addition to the works which a separate entity has designed by or on behalf of the Employer.
	d. Intermediate Building Contract with contractor's design (ICD)
	This is a contract that resembles IC, but it also offers provision for the designed portion of a Contractor.
	e. Minor Works Building Contract (MW)
	The work is not only designed on behalf of the employer but is also simple.
	f. Minor Works Building Contract with contractor's design (MWD)
	This contract resembles MW. It, however, also offers provision for a Contractor's Designed Portion.
	g. Repair and Maintenance Contract (Commercial) (RM)
	Here, the works consist of repair and maintenance of a building. There is also no appointment of an independent contract administrator.
Traditional	h. Building contract for a homeowner/occupier who has not appointed a consultant to oversee the work (HO/B)
(Lump sum)	For works involving small domestic building, for example alterations and extensions. This contract expects the customer to deal with the contractor directly and it offers no provisions for an independent contract administrator.
	i. Building contract for a homeowner/occupier who has appointed a consultant to oversee the work (HO/C)
	This resembles HO/B but it also provides a contract administrator



	j. Home Repair and Maintenance Contract (HO/RM) For the straightforward but minor repairs and maintenance to domestic buildings. There is an absence of any consultant acts in the best interest of the homeowner to oversee the contract
Traditional	a. Standard Building Contract with Approximate Quantities (SBC/AQ) For bigger works where a separate entity carries out design and/or detailing on behalf of the Employer. The employer can also do this task themselves. It is necessary to have detailed contract provisions and the Employer should make drawings and an approximate bill of quantities available to the Contractor to define the scope and quality of the work.
(Measurement)	b. Measured Term Contract (MTC) By Employers with a steady flow of minor maintenance works, inclusive of improvements. A single contractor does this over a stated duration and under one contract
Traditional (Cost reimbursement)	Prime Cost Building Contract (PCC) This is intended for projects that need an early start on site, where the works are designed by, or are in the best interest of, the Employer but where it is impossible to come up with full design information before beginning of the works. This a contract most utilized in alteration and critical repair work
Design and build	 a. Major Project Construction Contract (MP) For the most important works. Here, the Employer frequently obtains large-scale construction work, and the prospective Contractor is proficient and can handle more risks than would come up under other JCT contracts. Furthermore, the Employer prepares their requirements and details them out to the Contractor. The Contractor is tasked with completing the design as well as the works. b. Design and Build Contract (DB)
	It is necessary to have detailed contract provisions and prepare Employer's Requirements then present them to the Contractor. Furthermore, the Contractor is tasked with carrying out and completing the works in addition to completing the design. The Employer seeks the services of an agent (who could be an external consultant or employee) so as to enact the conditions.
Management	a. Management. For big projects that need a prompt start on site, where the Employer is expected to provide drawings and specifications to the Management Contractor. However, the Management Contractor does not do any construction work but merely manages the Project at a fee.



	b. Construction Management. Here a Construction Manager manages the project for Employer; and he (the Employer) enters into a direct and separate trade contract. The employer uses the Construction Management Trade Contract (CM/TC).
	c. Design – manage – construct.
	Here the Employer enters direct separate trade contracts; The Construction Manager administers the conditions for the Employer.
	a. JCT - Constructing Excellence Contract (CE)
Doutooving	For procuring construction works and their associated services, together with usage during the course of the supply chain, as well as providing professional services. It can be used where members desire to provoke co-operative and integrative working
Partnering	b. JCT - Constructing Excellence Contract Project Team Agreement (CE/P)
	Used together with the JCT - Constructing Excellence Contract (CE) and where the project team enters into multi-party pain/gain agreement.
	Employers that work frequently and desire to realize the benefits of extended relationships within the supply chain.
Framework Agreement	 Procuring works associated with construction/engineering works over time Used by clients with contractors and/or suppliers
	 Used by sub-contractors, contractors and/or suppliers that sub-let to others within the supply chain Used with many of the standard forms of construction and engineering sub-contracts and contracts.
	Pre-Construction Services Agreement (General Contractor) (PCSA)
Pre-Construction Services Agreement	The contractor supplies pre-construction services that are designated under a two-stage tendering process; and the main contract is the JCT Standard Building Contract, Intermediate Building Contract, Design and Build Contract, Intermediate Building Contract, Major Project Construction Contract. The design by the contractor could also be used.
Concultancy	Consultancy Agreement (Public Sector) (CA
Agreement	This is used by Public Sector employers who are carrying out construction works and desire to involve a consultant (of whichever discipline) to perform services for such works.



10.2 Appendix (Conceptual Framework in details)

The conceptual framework proposed to develop the existing system to select the contract forms in the construction project in Kuwait (Author).

Standard form Procurement methods Payment terms		Payment terms	Description			
		Lump sum	This is a suitable selection for superstructure project; large project and the responsibility share between consultant and contractor, high risk for contractor due to know the approximate amount of project. Duration of project might be extended due to poor coordination between partners of project or decision delayed. It will be useful for almost of sectors expect the investment, Commercial and transportation.			
S.F (I)	Traditional Design Bid Build	Unit price	This is a suitable selection for superstructure project: Small and complex project. The responsibility shares between consultant and contractor, Risky for employer due to unknow the approximate amount of project. Quilty will be considerate and manged by consultant and employer. Delay can be avoided by raised the coordination between partners due to the size of project. It will be useful for almost of sectors expect the investment.			
		Cost Plus	This is a suitable selection for Regular Projects with more details if the project usually known that the scoop of works and the details of design. It can be benefit with this type by having a full control about the project (responsibility of employer) and encourage the contractor to saving the time and ensure the higher quality by managing the contract by supervision team. this type of contract can be useful for projects of culture, religious, Educational, and military.			
S.F (II)	Design and Build	Lump sum (L1*)	This is a suitable selection for superstructure project: specific project and Large and complex project where the project needs to be high coordination between contractor and consultant. The responsibility of project will be mostly with contractor, but the employer can be having a control for the project by post a list of consultants pre- qualified and the contractor will select one of these consultants, Risky for employer due to unknow the final design of project and the amount of project. Price might be raised due to quality control. The time, quality and responsibility are the most criteria's can be benefit with this contract Delay can be avoided by highest coordination between partners. It will be useful for almost of sectors expect the investment.			
		Unit price (L2*)	This is a suitable selection for superstructure project: Small and Simple project. The responsibility shares between employer and contractor, those type of project can be designed it by employer due to the size of project. Sort of Risk for employer if he does not measure the quantity well. the approximate amount of project can be known. Quilty under the control. Delay can be avoided by with good coordination between partners. The time is the most			



			criteria can be benefit with this contract. It will be useful for almost of sectors who has a good experience except the investment.			
		Cost Plus	This is a suitable selection for Regular Projects and simple if the project usually known that the scoop of works and the details of design. It can be benefit with this type by having a full control about the project (responsibility of employer) and encourage the contractor to saving the time and ensure the higher quality by managing the contract by supervision team. this type of contract can be useful for projects of culture, religious, Educational, and military.			
S.F (III)	Turnkey		The beneficiary Ministry of public works has a large experience, and they build for other ministries their projects where this ministry has a higher experience of coordinator with all ministries as well as they have a good staff deal with many different types of projects and they are updating the general/special specifications, also they have extensive experience in contract management and contractual procedures. Almost of their projects were including the furnished			
		BOT	Investment projects it can be benefit from the privet sector to build and operator then transfer the project after short period. this type of contract can be useful for projects of Commercial and entertainment			
S.F (V)	Partnering agreement basis	ррр	This type of contract can be benefit with mage project especially with development projects when the governmental sector needs to pre-qualify their sector and benefit with international experience. The large international companies will have strategic partnership with the government for long period by build and operator and prequalify the employer for no less than 40 years. This type of contract can be useful for residential cities, specialised hospitals, Energy, gas and oil projects.			
		F.M	This type of contract will be useful after BOT project transferred to governmental sector where they need to save quality of building by managing their investment and keep the regular maintenance of buildings.			



10.3 Appendix (Survey)

A- PARTICIPANT INFORMATION SHEET

Study title.

An investigation into the systems used to select contract forms for Construction projects in Kuwait.

Invitation Paragraph

You are being asked to take part in a research study. Before you decide, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask me/us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part. Thank you for reading this.

Purpose of study?

The aims of this project to critically analyse systems used for the selection of contract forms on construction projects in Kuwait.

In order to achieve the main aims, this project has been divided into the following objectives:

- Collect data on systems being used for the selection of contract forms on construction projects in Kuwait.
- Analyse collected data in relation to best practice, based on a review of published literature.
- Use analysis to identify strengths and weaknesses in the existing systems used for selection of contract forms on construction projects in Kuwait.

Why have I been invited to participate?

I am planning to invite 200-250 people who aged above 21 in different sectors of engineering and other departments who have dealt with construction contract form for construction projects in Kuwait.

Do I have to take part?

As participation is entirely voluntary, it is up to you to decide whether or not to take part. If you do decide to take part, you will be given this information sheet to keep and you will be asked to sign a consent form. If you decide to take part, you are still free to withdraw at any time until submission of the survey. As survey responses are anonymous, you will be unable to withdraw your data after submission, as I will not be able to identify individual responses.

What will happen to me if I take part?

The survey will be including three sections: the first section is questions about your background and experience of construction projects in Kuwait, while second and third section are focus on collecting data about the contract forms that are used on construction projects in Kuwait. where second section will be about the types of standard forms of contracts, Project delivery system and Payment terms selected use in Kuwaiti projects, while the third section will be about the decision made to modify the standard form of contract use on construction projects in Kuwait as well as the strength and weaknesses of the system used to select the contract forms for construction projects in Kuwait.

How long will it take?

This survey should be not taken more than 10 mins



Are there any lifestyle restrictions?

There are not any lifestyle restrictions.

What are the possible disadvantages and risks of taking part?

The study is considered low risk, and that participants may complain to the Chair of the REC.

What are the possible benefits of taking part?

Improved the system used to select the contract forms by building on strengths and weakness of the system selection of contract forms for construction projects in Kuwait and propose strategies that have the potential develop the system by conceptual framework on best practice for contract forms selection within focus on the number of criteria's such as: size, type, sector, time, risk, payment, and quality.

What if something goes wrong?

The ethical guidelines and procedures put in place ensure that there is very little that can go wrong.

Will my taking part in this study be kept confidential?

All information which is collected about you during the course of the research will be kept strictly confidential [until 30 sept 2023]. Any information about you which leaves the University will have all your identifying information removed. With your permission, anonymised data will be stored and may be used in future research – you can indicate whether or not you give permission for this by way of the Consent Form.'

Will I be recorded, and how will the recording be used?

I will not be recorded it by audio or video.

What will happen to the results of the research study?

The results be written up as part of my studies, you will not be identified in any report or publication unless you specifically request it.

Who is organising and funding the research?

The research is being organised by [>>>>>>] in conjunction with

Who has reviewed the study?

The study has received ethics approval from Brunel University, according to universities ethic approval policy.



B– Questionnaire

Section A: This section includes questions about your background and experience of construction projects in Kuwait.

- 1. What is your profession?
 - o Engineer
 - o Architect
 - o Other.
- 2. How many years have you worked in the construction industry, whether in Kuwait or abroad?
 - Less than 10 years
 - \circ 10 to 20 years
 - o 20 to 30 years
 - $\circ \quad \text{Above 30 years} \quad$
- 3. What kind of organization do you work for:
 - o Employer
 - o Consultant
 - o Contractor
 - \circ Other
- 4. What best describes your current role:
 - Project manager
 - o Sit-Engineer / Consultant Engineer
 - Contract Specialist
 - o Other
- 5. On a scale of 1 to 10, how well do you rate your understanding of the process used to select contract forms to be used on construction projects in Kuwait?

(1 = no understanding, 10 = highest level of understanding)

Г	1	2	2	4	E	6	7	0	0	10
	I	2	3	4	5	0	/	0	Э	10
_										

6. In what sector(s) of the construction industry do you work or have you worked on it:

(you can choose more than one)

Education	Health	Transport	Infrastructure	Military	Mage construction	Housing	And /other
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<u>Second B</u>: This section is collecting data about the contract forms that are used on construction projects in Kuwait.

7. In your experience, which type of the following standard forms of contracts, Project delivery system and Payment terms selected use in Kuwaiti projects?

STANDARD FORMS OF CONTRACT	Often	Sometime	Never	I Do not know
Kuwait Domestic Form of Contract				
FIDIC forms of contract				
JCT Forms of contract				
ICE/ICC Forms of contract				
NEC/NCC Forms of contract				
*For other international or domestic forms of contract please specify:				
PROJECT DELIVERY SYSTEM (PDS)	Often	Sometime	Never	l Do not know
Traditional Design bid Build				
Design and Build				
Build operation Transfer (BOT)				
Turn-key Project				
Management Contracting				
Partnering				
*For other Project Delivery System (PDS)please specify:				
PAYMENT METHODS	Often	Sometime	Never	I Do not know
Lump Sum				
Unite Price or Bill of Quantities				
Cost Plus (Cost Reimbursable)				
Guaranteed Maximum Price (GMP)				
*For other Payment methods please specify:		·		·



<u>Section C</u>: This section is collecting data about the system used to select contract forms on construction projects in Kuwait.

8. In the table below are a number of statements related to decisions that can influence the selection of contract form use for a construction project. Please read each statement and then, for each row, tick <u>one</u> box in the column headed by the answer that best represents the practice used to select contract forms on construction projects in Kuwait.

The standard contract form is selected according to the following criteria:		Never	Rarely	Neutral	Often	Always
6	Using a specific standard form when the contract is let on a lump sum/fixed cost basis.					
Payment terms	Using a specific standard form when the contract is let on a re-measurement basis.					
	Using a specific standard form When The contract is let on a cost reimbursable / variable fee basis					
	Using a specific form When The contract includes target cost clauses					
Project delivery system	Using a specific form when the contract is let on a Traditional Design Bid Build (DBB) basis					
	Using a specific form when the contract is let on a Traditional Design & Build (DB) basis					
	Using a specific form when the contract is let on a Traditional Build operation transfer (BOT) basis					
	Using a specific form when the contract is let on Turnkey basis					
	Using a specific form when the contract is let on partnering agreement basis					
ector	Using a specific form when the project is let large and complex					
Size and se	Using a specific form when the project is let small and simple					
	Using a specific form for each different public sector					
Funding	Using a specific form when the project has supply chain					
	Using a specific form when the project if privately financed					
	Using a specific form when the project if Public financed					

9. In your experience, how often the decision made to modify the standard form of contract for use on construction projects in Kuwait according to the previous section?



- o Never
- o Rarely
- Neutral
- o Often
- o Always
- 10. Are you aware of any other circumstances in which the form of contract selected for a construction project in Kuwait is changed or modified?

Yes / No If "Yes", please briefly describe the circumstances in the box below

11. In your opinion, what are the main <u>weaknesses</u> in the in the system use for selecting contract forms used on construction projects in Kuwait?

12. In your opinion, what are the main <u>strengths</u> in the in the system use for selecting contract forms used on construction projects in Kuwait?

C– Interview Questions

<u>Section A</u>: This section includes questions about your background and experience of construction projects in Kuwait.

- 1. What is your profession?
- 2. How many years have you worked in the construction industry?
- 3. What kind of organization do you work for?
- 4. What best describes your current role?
- 5. How many years have you been working on your organization?
- 6. How many construction projects has your organization undertaken in the past 10 years?
- 7. On a scale of 1 to 10, how well do you rate your understanding of the process used to select contract forms to be used on construction projects in Kuwait?
 - (1 = no understanding, 10 = highest level of understanding)
- 8. Does your work involve you to select the type of contract form? If your answer is yes, please select if you are involved in the following activities?
- o Identify the project delivery system to be used on a project?

Yes / No

o Identify the Payment terms to be used on a project?

Yes / No



<u>Section B</u>: This section will be Investigating the system used to select the contract forms of construction projects in your organization?

Q1: According to quantitative data as per my survey, there are different types of standard forms of contracts, Project delivery system and Payment terms that are being used for Kuwaiti construction projects. Please identify what have you been using in your organization then write your comments?

	Types used	Most selected
STANDARD FORMS OF CONTRACT		
PROJECT DELIVERY SYSTEM (PDS)		
PAYMENT METHODS		

Q2: According to your answer in Q1 above, please select if you have **(Specific form)** for each option <u>or</u> If you are **(Typical standard form and modified for each project)**. Then, tick (\checkmark or \gg) then describe your answer or if you have any comments. Otherwise, if you don't use any of the following, please write **(Not applicable-NA)**.

Form for	Specific form	Typical standard form modified for each project	Describe your answer
Traditional Design bid Build			
Design and Build			
Turn-key Project			
Management Contracting			
Partnering Public Private			
Lump Sum			
Unite Price (Bill of Quantities)			
Cost Plus (Cost Reimbursable)			
Guaranteed Maximum Price			
(GMP)			

Q3: According to your answer in Q2 above, do you have a system to select the contract form for your projects? Yes / No

If your answer is Yes, Describe your system in the box below.



Q4: According to your answer in Q3 above, does your system to select the contract form depend on your knowledge, experience and nature of projects <u>or</u> it is following a specific criterion (guidelines/strategies) when you have any particular project?

Knowledge, Experience and Nature of Project	Specific System (Guidelines or Strategies)	
How are your system works		

Q5: In accordance with your response to Question 4 above, what types of documents do you amend, and to what extent, when you are given the authority to alter the standard form of contract for use on your construction projects?

Domestic Contract Documents				
Type of contract document	Fixed	Mostly Fixed	Un-Fixed	Describe your answer
Tendering procedure				
Contract documents conditions <u>(CAPT, General and particular</u> <u>conditions)</u>				
Technical conditions (General and particular Specifications drawing , table of price and quantities)				

<u>Section C</u>: According to your answers on previous questions, this section will investigate in detail the nature of contracts form selection as per the following:

	Contract form	Delivery system	Term of payment
1.	The standard domestic contract The international or other standard form	 Design Bid Built Design and Build Partnering Public Private Management Contracting Turnkey Any other type you might used 	 Lump sum Unite price Cost plus GMT Any other type you might used



Q6: In the table below are several statements, please read each statement and then for each row, tick one box in the column headed by your preferred answer

	Statement	Contract form	Delivery system	Term of payment
nd Risk	When there is a need to complete the project swiftly			
Time a	When the project has lots of risks			
	When the project is large and complex			
ze	When the project is large and not complex			
Siz	When the project is small and simple			
	When the project is small and complex			
ല	When the project has a large international funding element			
Indin	When the project is privately funded			
Fu	When the client wants specific suppliers for the project			
	When the type of project is an infrastructure			
Sector	When the type of project is part of transportations (Road, tunnel, Bridge)			
	When the type of project is part of Society (Education, Health, Culture)			
	When the type of project is part of Investor (commercial , financial ,trade)			
sibility	When the client wants to be responsible for the design			
	When the client wants a consultant to be responsible for the design			
kespor	When the client wants the contractor to be responsible for the design			
	When the client does not want to be involved with the supervision of the construction work			

<u>Section D</u>: This section will outline the strengths and weaknesses of the system used to select the contract forms for construction projects?

Q7: To what extent do you think that once you have not used the suitable contract for construction projects may lead to contractual issues? and what are those problems that are expected to be?

Q8: what are the main strengths and weaknesses in the in the system use for selecting contract forms used on construction projects in your organization?



D- Validation Questions

Section.1 Background of Respondent.

Name of Respondents (optional)
Profession:
Qualification
Current job designation
Your previous experiences
Years of experience in construction contract selection and contractual issues

Section.2 The existing system in place for selection of contract forms on construction projects in Kuwait.

1. Does the result of my survey & interview analysis seem correct?

o Yes / No

- 2. Do you think that the existing system seem build in the Knowledge, experience, natural of project and Guideline.
 - Yes / No If you answer <u>Yes</u>, can you describe how the system works.
- 3. Does the Standard form of contract address as important part in the construction field of Kuwait?
 - Yes, quite significant.
 - Yes, but not significant.
 - No, would make no difference.
 - not sure of its significance
- 4. Does the existing system of contract forms selection address a mainly of the contractual issues

such as Dispute, Variation order (V.O), termination, and delay?

- Yes, it is strong system.
- No, it is main cause of Contractual issues.
- No, but it is part of contractual issues.
- o not sure of its related to contractual issue

Section.3 Development of a conceptual framework on best practice for contract form selection.

- 5. Do you understand the conceptual framework?
 - o Yes / No



- 6. Would you say the framework provide it is simple, clear and easy to understand and use with little or no practical?
 - Yes, Simple, clear to understand it.
 - Yes, Simple, and quite understand it.
 - No, difficult to understand it
 - o Not sure
- 7. Would you say the framework is capable of assisting analysts in the selection of appropriate

of selection construction contract forms?

- Yes, highly capable.
- Yes, capable.
- No, not capable.
- \circ Not sure of its capability
- 8. Is the conceptual framework helpful?
 - Yes / No If you answer No, can you describe why do you think that is not helpful.

Section.3 Propose strategies for improving contract form selection practice in Kuwait.

- 9. Is my strategy realistic?
 - o Yes / No
- 10. What is your opinion on the approaches/methods proposed for improvement the

performance practice of construction filed in Kuwait??

- o very suitable
- o suitable
- o not suitable
- o not sure of its suitability
- 11. Do you think that this strategy can be useful to applied by two stages begin with temporary then long term to ensure sustainable for construction projects in Kuwait.
 - o Totally agree.
 - Agree, with temporary stage.
 - o Dis not agree.
 - o not sure of its suitability
- 12. Please provide any other general comments that you have on the framework or suggestions for improvement (continue on a separate sheet if necessary)



10.4 Appendix (Ethical Approval)



University Research Ethics Committee Brunel University London Kingston Lane Uxbridge UB8 3PH United Kingdom

www.brunel.ac.uk

22 June 2022

LETTER OF CONDITIONAL APPROVAL

APPROVAL HAS BEEN GRANTED FOR THIS STUDY TO BE CARRIED OUT BETWEEN 22/06/2022 AND 29/09/2022

Applicant (s): Mr Abdulaziz Almutairi

Project Title: An investigation into the systems used to select contract forms for Construction projects in Kuwait.

Reference: 36093-LR-May/2022- 39346-3

Dear Mr Abdulaziz Almutairi,

The Research Ethics Committee has considered the above application recently submitted by you.

The Chair, acting under delegated authority has agreed that there is no objection on ethical grounds to the proposed study. Approval is given on the understanding that the conditions of approval set out below are followed:

- Please ensure your recruitment methods (including the approach to potential participants) are compliant with UK and international data protection laws.
- · Please ensure you store research data on secure Brunel servers, and adhere to Brunel research data management policies.
- The agreed protocol must be followed. Any changes to the protocol will require prior approval from the Committee by way of an
 application for an amendment.
- · Please ensure that you monitor and adhere to all up-to-date local and national Government health advice for the duration of your project.

Please note that:

- Research Participant Information Sheets and (where relevant) flyers, posters, and consent forms should include a clear statement that research ethics approval has been obtained from the relevant Research Ethics Committee.
- The Research Participant Information Sheets should include a clear statement that queries should be directed, in the first instance, to the Supervisor (where relevant), or the researcher. Complaints, on the other hand, should be directed, in the first instance, to the Chair of the relevant Research Ethics Committee.
- Approval to proceed with the study is granted subject to receipt by the Committee of satisfactory responses to any conditions that may appear above, in addition to any subsequent changes to the protocol.
- · The Research Ethics Committee reserves the right to sample and review documentation, including raw data, relevant to the study.
- If your project has been approved to run for a duration longer than 12 months, you will be required to submit an annual progress report to the Research Ethics Committee. You will be contacted about submission of this report before it becomes due.
- You may not undertake any research activity if you are not a registered student of Brunel University or if you cease to become registered, including
 abeyance or temporary withdrawal. As a deregistered student you would not be insured to undertake research activity. Research activity includes the
 recruitment of participants, undertaking consent procedures and collection of data. Breach of this requirement constitutes research misconduct and
 is a disciplinary offence.

Kind regards,

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Dr Derek Millard-Healy

Chair of the University Research Ethics Committee

Brunel University London

10.5 Some of the outcomes of Research

10.5.1 Ph.D. Research (Article)

 Almutairi, Fox and Braimah (2023), "Critical evaluation of the contract selection process used in the Construction Industry of Kuwait." (under review with Buildings Journal)

10.5.2 Ph.D. Research (Conferences)

- Almutairi, Braimah and Fox (2022), "A Methodology of critical evaluation of the contract selection process used in the Construction Industry of Kuwait." (Paper), 2nd International Conference on Civil and Environmental Engineering (ICCEE2022) January 6-7, 2022 Malaysia <u>https://doi.org/10.1051/e3sconf/202234705010</u>
- Almutairi, Braimah and Fox (2022), "A Methodology of avoiding a contractual issue on Construction project in Kuwait." (Paper), 10th International Conference on Civil Engineering (ICCEN 2022) will be held during September 23-25, 2022, Singapore. <u>A</u> <u>Methodology of Avoiding a Contractual Issue on Construction Project in Kuwait</u> (ijscer.com)