SUITABILITY OF FIDIC CONTRACT OVER THE PUBLIC PROCUREMENT ACT (PPA) 2006 FOR LOCAL PUBLIC PROJECTS IN BANGLADESH

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DEDICATION

This thesis is dedicated to my loving parents for shaping me into the person I am today, as well as my wonderful siblings for their unconditional support.

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ABSTRACT

To accommodate and serve the vast amount of population, the government of Bangladesh must undertake a huge number of construction and infrastructure development projects every year. As we know, every construction project is followed by a form of contract so that the participating stakeholders can avoid disputes and the project can be executed accordingly. In 2006, the caretaker government of Bangladesh introduced its first-ever contractual form, which is known as Public Procurement Act (PPA). The maximum number of small to medium public-funded projects is accomplished by this form of contract. However, there are lots of issues that can be identified from this form of contract. Since the PPA authority is apathetic to reviewing and amending it, an alternate option can be marked and identified. Several international standard forms of contracts are very popular worldwide such as FIDIC, JCT, ICE, etc. The FIDIC contract is widely accepted and popular throughout the whole construction world. Hence, this research aims to discover the common issues of PPA and the advantage of FIDIC contract whether it can be used as the alternate option of PPA 2006. A quantitative approach has been adopted for this study. Two objectives were set and after reviewing the relevant works of literature, five key variables were identified for each of them. A set of questionnaires has been developed and validated to achieve the result. Ninety respondents from construction professionals in Bangladesh have participated. The data were analysed using compare means analysis and ANOVA analysis. The result of the first objective revealed several common issues regarding the PPA 2006 such as Applicability, Stakeholder Dissatisfaction, Dispute Management, Delay, and Quality Assurance. For the second objective, there are several advantages of the FIDIC contract identified, which are comfortable Applicability, Stakeholder Acceptance, Dispute Management, Time Management, and Payment Clarification. Since the hypothetical issues that commonly arise in the public funded small to medium size projects due to the PPA contract are proved true, and the FIDIC contract is advantageous at the same point; it can be said that the FIDIC can help to minimise the frequent issues of those projects in Bangladesh.

ABSTRAK

Untuk menampung dan memberi perkhidmatan kepada jumlah penduduk yang ramai, kerajaan Bangladesh harus melaksanakan sejumlah besar projek pembinaan dan pembangunan infrastruktur setiap tahun. Seperti yang kita ketahui, setiap projek pembinaan diikuti dengan satu bentuk kontrak supaya pihak pelabur bagi projek tersebut dapat mengelakkan pertikaian dan projek itu dapat dilaksanakan dengan sewajarnya. Pada tahun 2006, kerajaan Bangladesh memperkenalkan bentuk kontrak yang pertama, yang dikenali sebagai Akta Perolehan Awam (PPA). Bilangan maksimum projek kecil dan sederhana yang dibiayai oleh awam dicapai melalui bentuk kontrak ini. Walau bagaimanapun, terdapat banyak isu yang boleh dikenal pasti daripada bentuk kontrak ini. Memandangkan pihak berkuasa PPA tidak peduli untuk menyemak dan memindanya, pilihan alternatif boleh ditanda dan dikenal pasti. Beberapa bentuk kontrak antarabangsa yang popular di seluruh dunia adalah seperti FIDIC, JCT, ICE, dll. Kontrak FIDIC diterima secara meluas dan popular di seluruh dunia pembinaan. Oleh itu, penyelidikan ini bertujuan untuk mengetahui isu-isu biasa PPA dan kelebihan kontrak FIDIC sama ada ia boleh digunakan sebagai pilihan alternatif PPA 2006. Pendekatan kuantitatif telah digunakan untuk kajian ini. Dua objektif telah ditetapkan dan selepas menyemak karya kesusasteraan yang berkaitan, lima pembolehubah utama telah dikenal pasti untuk setiap satu. Satu set soal selidik telah dibangunkan dan disahkan untuk mencapai keputusan. Sembilan puluh responden daripada profesional pembinaan di Bangladesh telah mengambil bahagian. Data dianalisis menggunakan analisis perbandingan min dan analisis ANOVA. Hasil daripada objektif pertama mendedahkan beberapa isu biasa berkenaan PPA 2006 seperti Kebolehgunaan, Ketidakpuasan Pihak Berkepentingan, Pengurusan Pertikaian, Kelewatan dan Jaminan Kualiti. Bagi objektif kedua, terdapat beberapa kelebihan kontrak FIDIC yang dikenal pasti, iaitu Kebolehgunaan yang selesa, Penerimaan Pihak Berkepentingan, Pengurusan Pertikaian, Pengurusan Masa dan Penjelasan Pembayaran. Memandangkan isu hipotesis yang lazimnya timbul dalam projek bersaiz kecil hingga sederhana yang dibiayai awam disebabkan oleh kontrak PPA terbukti benar, dan kontrak FIDIC adalah berfaedah pada titik yang sama; boleh dikatakan

bahawa FIDIC boleh membantu untuk meminimumkan isu-isu projek yang kerap berlaku di Bangladesh.

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LIST OF ABBREVIATIONS

ADB	-	Asian Development Bank
ADR	-	Alternative Dispute Resolution
AIIB		Asian Infrastructure Investment Bank
BACI	-	Bangladesh Association of Construction Industry
BBS	-	Bangladesh Bureau of Statistics
BIM	-	Building Information Modelling
BNBC	-	Bangladesh National Building Code
CGFR	-	Compilation of General Financial Rules (Bangladesh)
CIOB	-	Chartered Institute of Building
CPTU	-	Central Procurement Technical Unit (Bangladesh)
DSC	-	Differing Site Condition
ECNEC	-	Executive Committee of the National Economic Council (Bangladesh)
EZ	-	Economic Zone
FIDIC	-	'Fédération Internationale des Ingénieurs - Conseils
GB	-	Green Building
GDP	-	Gross Domestic Product
HBRI	-	Housing and Building Research Institute
ICT	-	Information and Communication Technology
IFC	-	International Finance Corporation
IMED	-	Implementation, Monitoring, and Evaluation Division (Bangladesh)
LDC	-	Least Developed Country
MoEF	-	The Ministry of Environment & Forests (Bangladesh)
MRT	-	Mass Rapid Transit
NEMAP	-	National Environment Management Action Plan (Bangladesh)
NIC	-	Newly Industrialised Country
PEs	-	Public-Sector Entities
PMI	-	Project Management Institute
PPA	-	Public Procurement Act (Bangladesh)

PPR	-	Public Procurement Rule (Bangladesh)
RAJUK	-	Rajdhani Unnayan Kattripakkha / the Capital Development Authority (Dhaka, Bangladesh)
RMGI	-	Ready-Made Garment Industry
RIBA	-	Royal Institute of British Architects
SEMP	-	Sustainable Environment Management Programme
SFC	-	Standard Form of Contract
SPSS		Statistical Package for the Social Sciences
UN	-	United Nations

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CHAPTER 1

INTRODUCTION

1.1 Introduction

The term “construction” refers to the art and science of forming objects, systems, or organizations. Construction, in its most common sense, refers to the processes involved in constructing buildings, infrastructure, industrial facilities, and operations from end to end. Construction normally begins with planning, finance, and design and continues until the asset is built and ready for use; it also includes repairs and maintenance, any expansion, extension, or improvement work, and the asset's ultimate demolition, dismantling, or decommissioning (Oxford Advanced Learner’s Dictionary).

The construction industry is an important part of a country's overall economic development since it creates a bunch of works and offers plenty of investment opportunities. Despite advancements in technology, management, and research, this industry has struggled to meet project delivery targets within a specified time frame.

Bangladesh The construction industry largely contributes to the gross domestic product (GDP) of several countries. In 2012, the global spending on construction activities was over $4 trillion. Construction spending now exceeds $11 trillion per year, accounting for around 13% of global GDP. These revenues have grown to roughly $14.8 trillion by 2030 Since construction projects are complex, it is hard to find any project without any problem (Soni et al., 2017). A single problem can lead to a dispute among parties. The construction industry of Bangladesh is not free of problems too. Alike other construction industries, Bangladesh’s construction sector must have a few factors that create disputes frequently (Global Construction Perspectives, 2021).

Bangladesh is a country in the process of development. Nowadays, they are about the construction industry's high investment, particularly in commercial, residential, and multifunctional building projects, among other things. This industry employs almost 5.9 million people and provides around 7.8% of the country's GDP (Basic Statistics, 2016). Information and Communication Technology (ICT), Ready-Made Garment Industry (RMGI), and Megaprojects (bridges, Special Economic Zones, tunnels, highways, railways, airports, seaports, power plants, dams, wastewater projects, and so on) are viewed as driving forces. So that Bangladesh needs huge funds for infrastructure development projects and Asian Development Bank (ADB) gives funds to several Asian countries including Bangladesh (Ahsan & Gunawan, 2010).

Nowadays, the construction industry is a complicated and demanding environment in which individuals with a wide range of viewpoints, talents, and levels of construction process knowledge engage in a variety of projects. In this highly dynamic environment, participants from different professions each have their own objectives and hope to maximize their benefits. Conflicts are unavoidable in the construction industry because of the wide range of opinions held by the various project stakeholders. If conflicts are not dealt with properly, they can escalate into disagreements and even litigation. Disputes are one of the most significant obstacles to the successful completion of the construction project.

So, conflicts, claims, and disagreements are common in construction projects. Conflicts result in inefficiencies and losses to the end project in all three dimensions of cost, quality, and time. Most disputes arise as a consequence of misconceptions caused by inadequate communication between parties, the uniqueness of each project, a lack of clarity on quality standards, and delays (Botha, 2000). The majority of the disagreements are the result of poor procurement practices. Conflicts can be prevented at two stages: before they occur via pre-planned mitigation measures, and after they occur through the effective operation of a better procurement arrangement (Heenkenda & Hadiwattege, 2012).

1.2 Background of the Study

Construction projects are very complex, uncertain, and risk-oriented activities. It includes contract selection, technology, task description, assessment of necessary resources and durations for specific activities, and identification of any relationships between the various work tasks. Many participants are involved in the construction business at various stages, with the construction organization largely including responsibilities such as planning, design, construction, and maintenance. From the beginning to the end of the project, the stakeholders, including the client, designer, contractor, and manufacturer, are involved. According to a previous study, traditional construction project delivery practices resulted in a slew of issues related to fragmentation, including professional isolation, a lack of coordination between design and construction, and the fact that everything is done in sequential order.

Botha, (2000) highlighted that it is necessary to minimize conflicts in order to avoid price escalation, negative impacts on timing and quality difficulties, cost spiraling due to conflict resolution, and damage to the legal relationship between parties. From now on, it is unavoidable to recognize that reducing conflict within the project environment is of the utmost significance. Construction and engineering conflicts are on the rise in Bangladesh too. According to a recent survey in Bangladesh, 30 percent of construction contracts signed in the last 12 months have been disputed by customers, contractors, and consultants. The evaluation of delay, the extension of time, and contract modifications were indicated as the principal sources of discontent in more than 8 out of 10 disputes between the customer (owner) and the main contractor (Rahman, 2017). Though the country boasts a remarkable economic track record, a highly adaptable and competitive workforce, and numerous promising industrial sectors in Asia with a low-cost, high-return manufacturing environment.

Bangladesh is among the world's fastest developing economies. Its economy has been consistently increasing at a rate of moreover 6.8 percent on average for the past decade, transforming the country into a land of opportunity (The Daily Star, 2022).

Bangladesh is one of the finest investment destinations in the world because of its vast domestic markets, strategic location, high profitability, demographic dividend, attractive incentive policies, and continual changes for a better business climate. Bangladesh's GDP is expected to expand by 5.2 percent in 2020, despite the worldwide pandemic, and 6.8 percent in 2022, according to the Asian Development Bank (Asian Development Bank, 2016). Bangladesh is presently the world's 27th most attractive investment country, according to a World Bank report from 2013. And Bangladesh is one of the world's five fastest expanding economies, according to a World Bank analysis (World Bank, 2021). Bangladesh is the fifth-fastest expanding economy, after Ethiopia, Rwanda, Bhutan, and India. Despite insufficient private sector investment, Bangladesh recorded 7.3 percent GDP growth in the fiscal year 2019. Due to the fact that all of the elements of production are cheaper in Bangladesh than in other South or Southeast Asian nations, both domestic and international investment are insufficient.

Currently, there are lots of megaprojects are ongoing in Bangladesh, which is done by foreign contractors such as Padma Bridge which is constructed by China Railway Major Bridge Engineering Company Limited, Metro rail, Karnaphuli Tunnel & so on. Several components of those projects are always taken over by local contractors. Some local projects are funded by World Bank (WB), Asian Development Bank (ADB), or Japan International Cooperation Agency (JICA) (Asian Development Bank, 2016). That would be impossible that no conflicts or disagreements in a perfect construction world. There is a possibility of conflict in every business where people must work together and collaborate, and the construction industry is no exception. There is often a lack of awareness regarding the causes of disagreements yet knowing the causes of disputes is essential to preventing disputes and resolving them if they do occur (The I. E. W. O. F., 2007).

The planning commissions in Bangladesh, promote urban development planning is above rural planning. The planning commissions are not interested in studying the rural problem because the urban image is always considered for any type of development. Furthermore, planners are interested in constructing "Super Structures" but when the major goal of the construction is for the people, their input is completely neglected. As a result, public initiatives are not served to the public in a

proper manner. Although there are government procurement stands in place, such as the Public Procurement Rule (PPR) & the Public Procurement Act (PPA). Foreign contractors are frequently concerned about corruption in contracts funded by foreign governments, as corruption and procurement delays increase project costs and duration (S. A. I. Mahmood, 2010). Foreign contractors refuse to bring their own contracting forms. They prefer an international standard form of contact (SFC).

Standard form construction contracts establish a legal framework that identifies the parties' rights, obligations, and responsibilities. They also define the scope of the contract administrator's rights and responsibilities, as well as the administrative processes required to carry out the contract. There are several standard contracts, subcontracts, warranties, and appointment agreements published by organizations in the worldwide construction industry such as the Joint Contracts Tribunal (JCT), the Royal Institute of British Architects (RIBA), the Institution of Civil Engineers (ICE), International Federation of Consulting Engineers (FIDIC) and so on. These agreements are valuable because they have been used between parties and their specific meaning has been confirmed by case law. Among them, FIDIC is one of the most used contractual forms that are being used worldwide.

1.3 Problem Statement

Construction is a dynamic and complex industry. Construction is a vital aspect of a country's economic development since it produces jobs and provides investment opportunities. They are about large construction investment, particularly in commercial, residential, and multipurpose developments. This sector employs almost 5.9 million people and contributes roughly 7.8% of the GDP (Basic Statistics 2016). Construction is vital to Bangladesh's overall growth since it stimulates the economy and produces jobs. Bangladesh has a population density of around 1252 persons per square kilometer, making it one of the world's densest countries (Shakil Ahmed et al., 2020). For such a large population, this nation has to take on a huge number of construction and infrastructure projects.

In a perfect world, there would be no problems or disagreements. On the other hand, there is no such thing as conflict is inevitable in every sector where people must work together, and the construction industry is no exception. Client, designer, contractor, and manufacturer are all involved from start to finish. So, they are suffering from various problems. Such as contract issues, time and cost overrun, disputes, litigation, low quality of works, workplace safety issues, and many others (Muhammad Saiful Islam & Suhariadi, 2018a). So, they must follow specific norms and regulations to complete the project. The Bangladesh interim administration created the Public Procurement Act (PPA) in 2006. There is no alternative contact standard in Bangladesh (SFC). The Public Procurement Act of 2006 and the Public Procurement Rules of 2008 govern public procurement (Hoque, 2010). Until 2006, Bangladesh's legal framework for public procurement was based on processes and practices dating back to the British colonial era. A prime example is the Broad Financial Rules, which were first published during the British era and set forth the general rules controlling government contracts. The study should cover the Public Procurement Act 2006 (PPA) and the local Standard Forms of Contract (SFC) that define the contractual parties' rights, obligations, and responsibilities.

Bangladesh's only public procurement act PPA-2006 lacks detailed clarification and description regarding the scope of the work (Patoari et al., 2020). It was also said that the ADR provisions strive to promptly resolve disagreements. Other than arbitration, they launched adjudication in Malaysia, Australia, and the UK. If a dispute cannot be resolved amicably through negotiation or mediation, arbitration is the sole binding ADR option. It also took a long time for the Central Procurement and Technical Unit (CPTU) to assess a claim.

It is also clear that PPA is very short in terms of detailed regulations. The details are stated in Public Procurement Rules (PPR) 2008. Rather than a single book, this form of contract comes with two separate books. A number of stakeholders expressed their opinion as it seems complex to understand to them due to these two separate books (Mohammed Salah Uddin et. al., 2020). Moreover, PPA tends to select the lowest cost tenders but does not concentrate on the quality issues that much (Shakil Ahmed, 2019).

Variation and quality issues are two of the most problematic factors in the construction sector of Bangladesh (Umar, 2018). For instance, the Banglanews authority (2020) reported that the design of the Moghbazar flyover in Dhaka city changed 122 times, resulting in project delays and disagreements. PPA mentions quality checking during the construction stage but does not require strict regulation. Hence there are a lot of materials quality issues that can be seen for the local public projects (Sohail & Cavill, 2008). The level of corruption is high indeed. For the maximum number of public project cases, delay and materials quality issues are very common. Local contractor tends to use cheap quality materials for a hidden profit. A number of local projects (i.e., govt. buildings, bridges) collapse just after hand-over to the client and this number is increasing day by day (Md. Rezwanul Kabir et al., 2021).

Other than the local SFC, there are several globally renowned standard contracts, subcontracts, service plans, and agreements published by organizations in the construction industry such as the Joint Contracts Tribunal (JCT), the Royal Institute of British Architects (RIBA), the Institution of Civil Engineers (ICE), International Federation of Consulting Engineers (FIDIC) and so on. Some agreements are significant because they were made between parties and confirmed by legal precedent. FIDIC is one of the most often utilized contractual forms worldwide. FIDIC is a global organization that sets contract requirements for the building industry. We help firms and engineers who provide technology-based services to the built and natural environments. Standard contract forms are an important aspect of construction project management.

Different types of construction and plant installation projects, such as infrastructure, real estate complexes, high-rise buildings, industries, and refineries, utilize FIDIC contracts. Model contracts exist to address a wide range of corporate and public sector projects. The contract model is separated into many volumes, each of which is color-coded for convenience of reference (red book, green book, silver book, yellow book, white book, gold book, etc.) (Guo, Z. L., Hu, Y., & Liu, 2014). To promote and implement the sector's strategic goals, as well as to supply members with relevant information and resources. The nature and scope of the project, the contract's purpose, and the parties' identities will all impact the choice of model contract (such

as whether between the owner and the contractor or between the contractor and a subcontractor or consultant) (Amer, 2022). Choosing the right model contract is crucial since each FIDIC contract is tailored to a specific project type and contains terms and conditions specific to that project. Using the wrong model contract might have a lot of negative consequences because it is not matched to the project's specific demands.

Finally, using a FIDIC contract for a construction project has a number of advantages, which explains their popularity and success because they increase the project's chances of success.

1.4 Research Question

The research aims to address the following questions:

a) What are the most frequently encountered problems regarding Public Procurement Act (PPA) 2006?
b) What are the advantages of using the FIDIC contract for local public projects in Bangladesh?

1.5 Research Aim and Objective

The purpose of this study is to compare the most frequently encountered issues regarding Public Procurement Act (PPA) 2006 with the FIDIC contract for local projects nowadays in Bangladesh. The following research objectives have been established in order to attempt the aim:

1) To find the common issues regarding Public Procurement Act (PPA) 2006.
2) To recognise the advantages of using FIDIC contract for local public projects in Bangladesh.

1.6 Research Scope

This research is being conducted to identify the issues from the PPA 2006 act out of the construction industry in Bangladesh and suggest the FIDIC contract as a solution. The issues of disagreements that have arisen in Bangladesh's construction industry, as well as the negative effects of these disputes. The research focuses on individuals who are currently involved in contract-related difficulties in Bangladesh's construction business, regardless of their experience level. Respondents for this study will be those who work as Contractors, Quantity Surveyors, Contract Managers, and Project Managers mainly. In order to finish this research, a survey of the construction industry will be done in Bangladesh.

1.7 Significance of Research

According to S. A. I. Mahmood (2010) Mahmood, government procurement accounts for 18.42 percent of global GDP in 2013. However, World Bank estimates that 2-3% of the GDP growth is lost due to corruption each year (S. A. I. Mahmood, 2010). In Bangladesh, restricted or direct procurement methods and appropriate contracts can be used for some specific reasons. This research can impact the upcoming construction projects of Bangladesh, regarding contractual matters. As contracts define the whole construction process and liabilities of each party. This research will provide a clear vision on FIDIC contract applicability, benefits, drawback, and suitability which help to minimize construction project issues that are being faced by local public projects in Bangladesh currently. The research will affirm the problems faced in the literature of PPA 2006 from the stakeholders.

1.8 Research Methodology (Flow Chart)

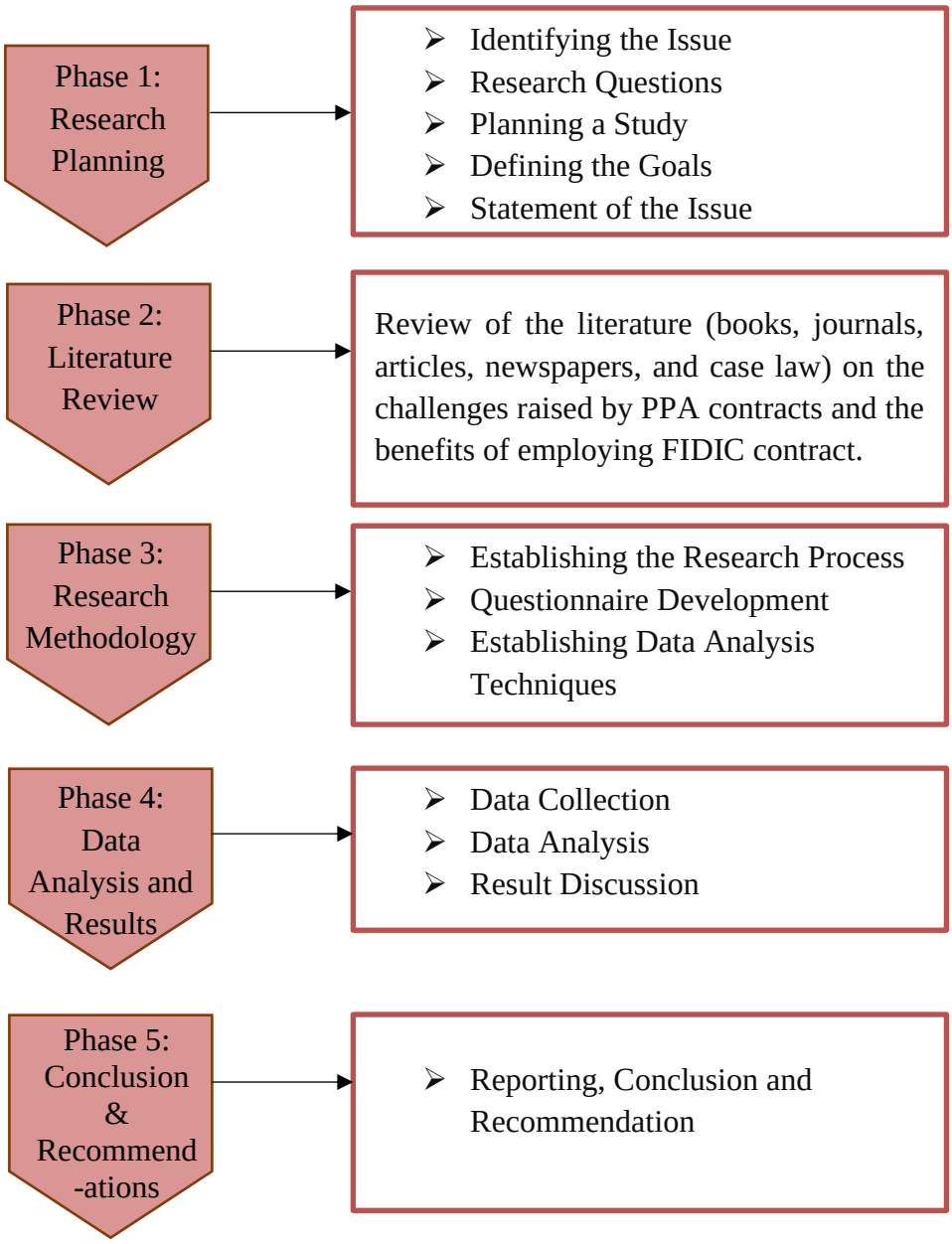

Figure 1.1 Research methodology flowchart

1.9 Thesis Outline

This thesis is divided into five chapters that detail the outcomes. Each chapter highlights relevant facts, achievements, and discoveries. Each chapter is summarized as follows:

Chapter one : (Introduction)	The chapter began with a brief introduction and historical context for the research. The research problem, research questions, and research purpose are then stated. Additionally, the study's scope and methodology are outlined. This chapter's objective is to conduct an analysis of the study prior to moving on to the subsequent chapters.
Chapter two : (Literature Review)	This chapter covers the literature review, which includes academic literature as well as investigations undertaken by previous researchers on the independent and dependent variables. It also includes many hypotheses relating to the study's issue. It also looks into relevant literature sources in order to come up with a result that reflects the topic's purpose. Furthermore, the purpose of this chapter is to provide context for the study and to create an ambiance for the research that included a literature review and analysis.
Chapter three : (Research Methodology)	This chapter discusses the research methodology that was used to accomplish the objectives of the study. This is separated into five stages, each of which has a unique purpose. The method allows a more methodical approach to research. The creation of questionnaires and data analysis techniques are addressed in this chapter. It also helps to support the explanations of how the study's objectives are achieved.

Chapter four : (Data Analysis and Results)	The result of the analysis is explained in this chapter. The summary's results, statistics, and the outcome of rigorous data analysis will be provided. The hypotheses in chapter three will be put to the test. A final review of the data analysis methodologies, survey results analysis, and comments can be found here. The research challenge, objectives, and questions, on the other hand, serve as the basis for the data generated.
Chapter five : (Conclusion and Recommendations)	The researcher's recommendations and conclusions based on the survey results are described in this chapter. It focuses on how the objectives were fulfilled, as well as how the study contributed to knowledge. This chapter also explains some of the research's limitations. It concludes with various suggestions, as well as recommendations for additional research.

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