

**FRAMEWORK DEVELOPMENT FOR PUBLIC PRIVATE
PARTNERSHIP IN AFFORDABLE HOUSING DELIVERY IN SAUDI
ARABIA**

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HOUSING DELIVERY IN SAUDI ARABIA**

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ABBREVIATIONS

CBOs- Community-Based Organisations

EU- European Union

GCC- Golf Cooperation Council

GDP- Gross Domestic Products

IOR - Interorganizational Relationships

ISM- Interpretive Structural Modelling

KSA- Kingdom of Saudi Arabia

MOMRA- Ministry of Municipal and Rural Affairs

NGOs- Non-Governmental Organisations

NTP -National Transformation Program

PFI- Private Finance Initiative

PPP- Public Private Partnership

REDF- Real Estate Development Fund

SPV – Special Purpose Vehicle

SR- Saudi Riyal

SSIM- Structural Self-Interactive Matrix

UK- United Kingdom

UN-HABITAT – United Nation Human Settlements Programme

USA- United States of America

ABSTRACT

With the adoption of the new Saudi Vision 2030, interest in public private partnership (PPP) has increased and the Saudi Government is seeking to build up private sector involvement in the provision of social services and infrastructure. Within this new strategy, PPP has been adopted as a vehicle for the delivery of affordable housing for middle-income groups and to solve the current Saudi housing challenges. However, there is a lack of published evidence on how PPP could contribute to better delivery of affordable housing in Saudi Arabia. Thus, the aim of this research is to understand how PPP could contribute towards improving the delivery of affordable housing for middle-income households, and to develop a framework for utilising PPP arrangements in Saudi Arabia.

In order to achieve this aim and gain an in-depth understanding of PPP in the housing sector, a critical review of the PPP literature in the housing sector was undertaken to identify which significant challenges are facing PPP implementation, leading to the formulation of the conceptual framework, which has been utilised as a guide to explore the challenge of the current implementation of Saudi PPP housing schemes. The Saudi Ministry of Housing has been used as a single case study and a qualitative research design has been employed, involving documentation and semi-structured interviews. Document review has been utilized to reflect the current practice of PPP in the Saudi housing sector. Data collection involved 14 interviews, which have been analysed to identify the significant challenges facing PPP implementation in the Saudi housing scheme.

Findings of this study indicate that the implementation of PPP for the delivery of affordable housing for middle income households in Saudi Arabia is challenged by 24 factors across the following three categories: Actors, Network, and Project. Based on these findings, an Interpretive Structural Modelling (ISM) framework was developed and validated to contribute towards improving the implementation of PPP for the delivery of affordable housing for middle-income households in Saudi Arabia. This research makes three contributions: firstly, the study explores the current implementation of PPP in the delivery of affordable housing in Saudi Arabia. Secondly, the study provides the hierarchy and the relationship between the different factors that challenge the implementation of PPP in the housing sector. Thirdly, the study provides an ISM-based framework to help improve the efficiency of the implementation of PPP in the Saudi housing sector. Finally, this research makes recommendations for both academics and decision-makers in the Saudi housing sector.

CHAPTER I – INTRODUCTION

1 INTRODUCTION

1.1 Research Background

Public-private partnerships (PPPs) have gained wide interest around the world. PPPs can be identified as cooperative arrangements between the public and the private sector to achieve a common goal (Alkhathlan, 2013; Francoz, 2010; Hodge & Greve, 2007; Kelly, 2003). The increasing use of PPP in infrastructure and public services serves to meet the rapid increase in the need for infrastructure and public services (Osei-Kyei & Chan, 2017a; U-Dominic, Ezeabasili, Okoro, Dim, & Chikezie, 2015). In most countries, there are two key drivers for PPP adoption: the activation of private sector funding for public services and the utilisation of the expertise from private companies and their capital for massive investment (Bovaird, 2004; Mirafatab, 2004). Therefore, PPP is seeing increasing use internationally and is being applied among different sectors.

PPP has been adopted in many sectors, including housing, particularly for the provision of housing for low-income people within urban areas (Parashar, 2014). Furthermore, PPP is promoted on the assumption that it enhances multi-sectorial participation and productivity of the housing sector, and increases housing affordability and accessibility (Ikekpeazu, 2004; Ibem, 2011; Mekawy, 2014). In addition, “governments around the world are turning to PPP as one possible financing option for large scale investments in the provision of affordable housing and other basic infrastructure assets” (UN-Habitat, 2011, p. 2). Thus, PPP has been adopted in the housing sector as a part of the Enabling Approach.

The enabling approach refers primarily to the development of a supportive context or environment for private entrepreneurs and other market actors (Hassan, 2011; Keivani & Werna, 2001; Mukhija, 2004). Its primary objective has been to improve the efficiency of the housing sector, concentrating on eliminating constraints on both the supply and the demand side (Angel, 2000). The effectiveness of the enabling approach increasingly hinges on the degree of success of the partnerships between different stakeholders (Sengupta, 2006).

Affordable housing can be identified in terms of the cost of housing in relation to household income (da Costa Nunez, 1994; Hulchanski, 1995; Mulliner, Smallbone, & Maliene, 2013; Pivo, 2013). Housing affordability has become a central concern in housing policies (Yates & Milligan, 2012). Thus, PPP in the provision of affordable housing has emerged because the delivery is based on an interactive network of relationships between government, from both the

national and the local level, and many different actors, and the collaboration between them has been proven to be vital (Mekawy, 2014). PPP in the delivery of housing has been practiced in Egypt, India, Pakistan, South Africa, Bulgaria, Mexico, Russia, Thailand and the United Kingdom and many other countries (Payne, 2000) .

Saudi Arabia is one of many countries that are aiming to solve the housing challenge using the PPP approach. A drop in oil prices in 2014 left the Saudi government with more than a 20% budget deficit in 2016. This led the government to announce PPP as a new approach for delivering public services, infrastructure, and housing within the new “Saudi Vision 2030” (Biygautane, Hodge, & Gerber, 2016; *Kingdom of Saudi Arabia’s Vision 2030*, 2016). The aim of adopting PPP in the Saudi housing sector is to increase the supply of affordable housing, reduce the cost, and motivate the private sector to develop new housing within a shorter time (Ministry of Housing, 2017).

Furthermore, in theory, PPP has high potential for success; however, practice proves that the value gain through the implementation of PPP is rare, as stakeholders with opposing interests and characteristics make the delivery of low-cost housing and urban renewal projects through PPP hard to realize (Bruggema, 2009) .According to Kavishe, Jeffrson, and Chileshe (2018, p. 203), “In both developing and developed countries, empirical studies on the challenges affecting the delivery of housing PPP projects, as well as the development of conceptual frameworks, are very limited” .

Therefore, the literature reports on the PPP arrangements which have worked in different countries, and have been applied in different sectors, and which Saudi Arabia has recently started to utilize as part of its 2030 vision. This research, however, will focus on exploring the challenges and enablers that influence the implementation of PPP arrangements within the housing sector in Saudi Arabia.

1.2 Problem Statement

In the last eight decades, Saudi Arabia has been experiencing a high rate of urbanisation. This is due to rapid urban growth associated with the population growth rate and domestic migration, especially to the greater metropolitan areas of Riyadh, Jeddah-Makkah-Taif, and Dammam-Khobar (Kyriazis, Balasis, & Patsavos, 2018). However, this rapid urbanisation has not been followed by adequate provision of affordable housing units for mid- and low-income households. According to Aleid (2017) it is difficult for the Saudi Government to meet and satisfy the need for housing alone because of the lack of performance of the private finance

market as well as public finance, which have exacerbated the housing shortage. Furthermore, in Saudi Arabia, the cost of housing is increasing faster than family income, and it is not compatible with the socioeconomic characteristics of Saudi families (Alqahtany & Mohanna, 2019).

With the pre-existing shortage in housing supply, an even greater need for housing has been created by the dramatic increase in population in Saudi Arabia. According to Bahammam (2018b), demographic data in Saudi Arabia indicate the need to provide 250,000 housing units per year to meet the need, and the difficulty of obtaining and owning adequate housing still faces a high percentage of Saudi households, especially in urban centres. “Housing in Saudi Arabia has been one of the main difficulties facing the average income Saudi citizen, not to mention low-income families as well” (Al Surf & Mostfa, 2017, p. 517) .

Since the unification of the Kingdom of Saudi Arabia in 1936, and particularly after the implementation of the Saudi Five Year Development Plan, the Saudi government has always been committed to providing affordable housing by playing the role of founder, developer, and contractor in delivering housing (Alhajri, Trillo, & Baldry, 2017). However, it has become clear that the government alone cannot provide adequate housing to meet the housing need due to lack of investment and a decrease in the housing budget (Mulliner & Algrnas, 2018).

The recently published “Kingdom of Saudi Arabia’s Vision 2030” (2016) describes PPP as a key driver for financing future infrastructure and public services. In addition, according to the Saudi National Transformation Program 2020 (2016), the delivery of housing units will be achieved through PPP (p.97). However, key issues such as the inefficiency of the public sector, the imposition of rigid planning rules, and the absence of a legal framework on PPP in Saudi Arabia, hinder this delivery (Biygautane, Hodge, & Gerber, 2018).

Based on the above discussion, it is clear that housing is a significant challenge in Saudi Arabia. While the recently published Saudi Vision 2030 suggests that PPP is a solution to minimise the housing challenge, several researchers conclude that PPP is still in an early stage and several factors hinder its efficient implementation. Therefore, there is a clear knowledge gap regarding the use of PPP in the housing sector in Saudi Arabia. This research attempts to fill this gap through concentrating on the use of PPP as a vehicle for affordable housing for middle-income households in Saudi Arabia.

1.3 Significance of the Research

Interest in PPPs has been reinvigorated since the strategic Saudi Vision 2030 was approved by Cabinet in April 2016. According to Butcher and Haque (2016), the National Transformation Program 2020 aims to adopt PPP in many sectors (health, education, transportation, and housing). As PPP is in an early stage in Saudi Arabia and is expanding among several sectors, this research will focus on the adoption of PPP within the housing sector.

By examining various studies, this research reviews, synthesizes, and critically assesses the knowledge and evidence regarding the implementation of PPP in the housing sector. The contribution of this study is to expand knowledge in this area. In addition, this study will encourage researchers to conduct further studies and highlight the effective implementation of the PPP in housing sector. Furthermore, the outcome of this research is expected to provide housing policy-makers with a framework and a set of recommendations which aim to support the implementation of PPP as a mechanism for the delivery of affordable housing.

1.4 Research Aim and Objectives

The aim of this research is to understand how PPP could contribute towards improving the delivery of affordable housing for middle-income households, and to develop a framework for utilising PPP arrangements in Saudi Arabia. This aim is to be achieved via the following objectives:

1. To critically review PPP definitions and concepts and their implementation in the development of affordable housing.
2. To analysis the current delivery mechanism for affordable housing in Saudi Arabia, in order to identify the critical issues.
3. To identify and examine the critical factors that could enable the application of PPP arrangements for the development of affordable housing.
4. To evaluate the challenges that would influence the implementation of PPP in the development of affordable housing in Saudi Arabia.
5. To develop and validate a framework for the effective implementation of PPP arrangements for the development of affordable housing in Saudi Arabia.

1.5 Research Questions

This research will focus on the use of PPP in delivering affordable housing in Saudi Arabia by aiming to answer the following main research question:

How can PPP contribute to better development of affordable housing in Saudi Arabia?

It also addresses the following sub-questions:

1. What are the factors that contribute to the success of PPP implementation in affordable housing?
2. What are the challenges that face PPP implementation in the housing sector in Saudi Arabia?
3. How can the Saudi housing sector successfully utilise PPP to meet the need for affordable housing?

1.6 Scope of the Research

PPP is a multidisciplinary subject used by governments to develop infrastructure and provide services in various sectors. This research concentrates on the utilization of PPP as a mechanism for the delivery of affordable housing. In the housing sector, PPP has emerged as part of an enabling approach where both government and housing market actors work together to deliver affordable housing and to address the housing challenge. This research will consider factors that contribute to the effective implementation of PPP in the housing sector. Previous research has investigated the implementation of PPP within the project level of analysis (Biygautane, Neesham, & Al-Yahya, 2019). However, this research taps into the wider organizational environment by investigating the implementation of PPP for the delivery of affordable housing through the strategic level, as top management from both the public and the private sector participate in this study.

Moreover, the research focuses on the enablers and the challenges that face the implementation of PPP in the delivery of affordable housing and how PPP could be effectively utilized in the housing sector. It is conducted within the context of Saudi Arabia, using data obtained from a single case study of the Saudi Ministry of Housing collected through document review, semi-structured interviews, and focus groups targeting PPP partners within the Saudi PPP housing scheme.

1.7 Research Process

To satisfy the primary aim of this research and to achieve its objectives, the following methodological steps will be undertaken. The study will be divided into three distinctive phases, namely a literature review, data collection and analysis, and finally the framework development stage, validation and conclusion , as described in Figure 1-1, below.

The first phase of this research starts with the literature review, whose aim is to develop an understanding of PPP, its character, arrangements, and its implementation globally. In addition, it discusses the rationale for PPP adoption within the housing sector and identifies the key factors that challenge the implementation of PPP in the housing sector, in order to form the conceptual framework of this research. Furthermore, the literature review comprehensively examines the concept of affordable housing and its measurement and provides an overview of the housing sector in Saudi Arabia and associated affordable housing challenges. In addition, it discusses the recent implementation of Saudi PPP housing schemes.

The second phase of the research focuses on the research methodology that has been adopted in order to achieve the aim and the objective of this research. The utilization of a multi-method qualitative approach is described. The data collection phase started with a document review to gain an understanding of the current practice of PPP housing schemes in Saudi Arabia. The findings from the document review will form the basis of interviews in order to confirm the findings of the first stage of data collection. The second method is semi-structure interviews, which are utilized in order to gain an in-depth understanding of the current challenges that face both the public and the private sector in the implementation of PPP for the delivery of affordable housing for middle income people in Saudi Arabia. Qualitative analysis (thematic analysis) has been adopted in this phase.

The final phase of this research will be framework development, discussion of the findings, and validation. The findings from the qualitative methods will be triangulated. The focus group approach is utilized to develop a framework that will explain how PPP could contribute towards improving the delivery of affordable housing for middle-income households in Saudi Arabia.

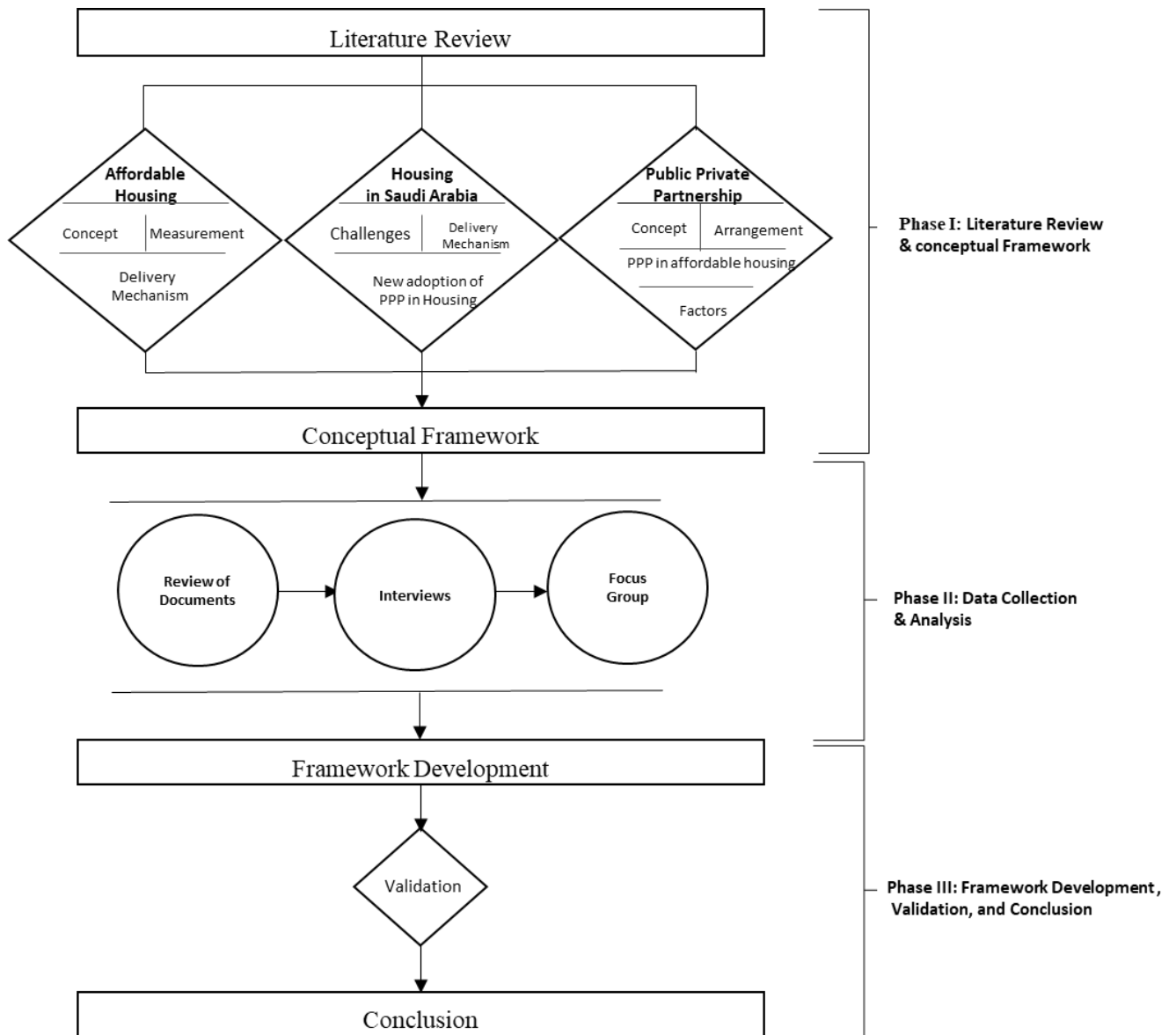


Figure 1-1 Research Structure

1.8 Outline of Research Methodology

The methodology of this research was designed based on the concept of the "Research onion" (Saunders et al., 2016). The philosophical stance of this research was established and guided by the nature of the investigation, which led to the identification of appropriate research approaches and helped to select suitable methodological choices, research strategy, and research techniques and procedures to collect data.

The research started with a literature review, which led to the identification of factors that influence the implementation of PPP in the development of affordable housing and formed the conceptual framework that guided the investigation at the data collection stage. Based on the aim and objective of this research, multiple qualitative methods were adopted. A case study was utilized as the research strategy: specifically, the Saudi Ministry of Housing was utilized as a single case study and both documentation review and semi-structured interviews were utilized as data collection techniques. The document review was utilized to understand the current practice of PPP in the Saudi housing sector, and the semi-structured interviews were used to identify the significant challenges facing the implementation of PPP in the Saudi housing scheme from the perspective of the scheme's stakeholders.

Furthermore, a focus group was conducted with PPP stakeholders in the Saudi housing sector and experts in order to develop the proposed framework, which was based on Interpretive Structural Modelling (ISM). In addition, to validate the proposed framework, another set of semi-structured interviews were conducted with different stakeholders. Figure 1-2, below, illustrates the key steps of the research process. The research methodology adopted for this study will be discussed and presented in more detail in Chapter 4.

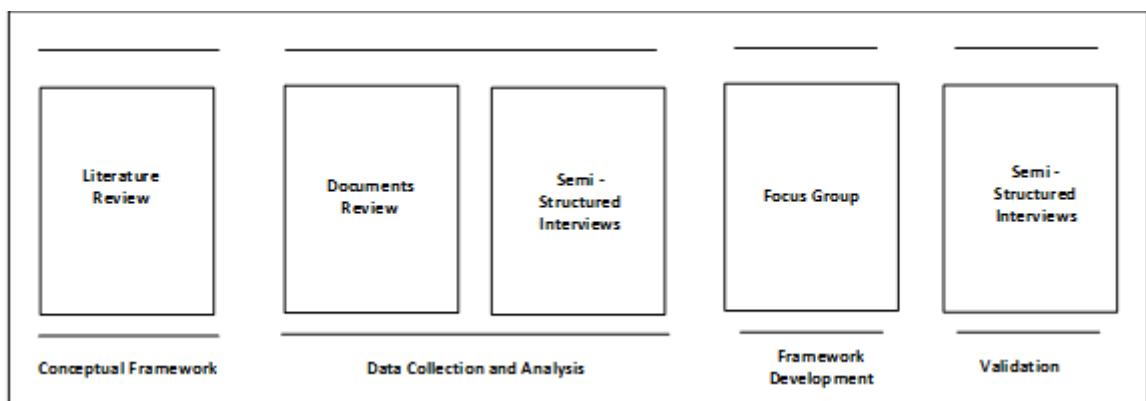


Figure 1-2 Research Process

1.9 Thesis Structure

Chapter 1 – This chapter consists of the introduction and background to the research, the research aim and objectives, a statement of the research problem and a breakdown of the structure of the thesis.

Chapter 2– This chapter reviews PPP definitions and concepts, PPP globally, PPP arrangements, and PPP adoption in affordable housing internationally, and factors that challenge PPP housing schemes. The chapter also identifies the factors that contribute to the success of PPP for affordable housing, in order to evaluate these factors in the Saudi context.

Chapter 3 – This chapter provides a literature review that relates to the housing development history of Saudi Arabia, its population demographics, the predicted and actual support of housing, the challenge of the Saudi housing sector, as well as the new adoption of PPP as a vehicle for affordable housing in Saudi Arabia.

Chapter 4 – Research Methodology.

This chapter discusses the research design and presents the research methods adopted to conduct the research in order to meet the aim and objective of this study.

Chapter 5 –Data collection and analysis.

This chapter discusses the data collection from the document review and semi-structured interviews, and analyses and presents the results. Both thematic analysis and a cognitive map were utilized for analysis of the qualitative data, with the focus on understanding the current practice and challenges facing the implementation of PPP in the delivery of affordable housing for middle income people in Saudi Arabia.

Chapter 6 – Framework Development, Discussion, and Validation

This chapter reflects on the use of interpretive structural modelling (ISM) as an effective method for developing the proposed framework, which addresses the aim and objectives of the research. Also, this chapter provides a discussion of the findings, and ends by describing the validation of the proposed framework.

Chapter 7 – Conclusions and Recommendations

This chapter sets out the extent to which the research aim and objectives were met. It also describes the value of the study to the literature and to the housing sector. It also includes recommendations, limitations and areas of future research.

CHAPTER II – LITERATURE REVIEW

2 Literature review

2.1 Introduction

Since the adoption of the Saudi Vision 2030 in April 2016, PPP has been utilized as a mechanism for the provision of affordable housing in Saudi Arabia, to contribute to solving the challenges faced by the housing sector and enhance the supply of affordable housing, as explained in the first chapter. Accordingly, in order to conduct this research, it is essential to define the concept of PPP. This chapter, therefore, aims to provide an overview of PPP in general and PPP in affordable housing in particular. It is divided into three main sections: the first will define PPP, PPP arrangements, PPP globally, and the PPP structure. The second section will focus on PPP adoption within affordable housing and why it has emerged as a vehicle for affordable housing delivery and will also review international experiences of PPP implementation in the housing sector. Finally, the last section will discuss the factors that contribute to the relative success or failure of PPP in the housing sector, in order to map a conceptual framework for this research.

2.2 Public Private Partnership

In order to understand PPP as mechanism for the delivery of affordable housing, it is important to clarify its definition, character, and components. This section will provide an understanding of the definition of PPP from both literature and governmental publications. However, in much of this literature, there is often a misconception between privatization and PPPs. Privatization is where the private sector becomes fully responsible for the risk and revenue without sharing it with public sectors, while in PPP, the two sectors share cost revenue and responsibilities (Bult-Spiering & Dewulf, 2008; Jamali, 2004; Singaravelloo, 2017). Despite the fact that PPP has been known as an arrangement for the delivery of infrastructure and public services for almost 30 years, there is no straightforward definition of PPP (Bult-Spiering & Dewulf, 2008).

Furthermore, the term "PPP" is used with a different range of meanings throughout the world. In the United States, PPP has been associated with downtown economic development and urban regeneration (Akintoye & Beck, 2009), while in the UK, PPP is used to refer to the Private Finance Initiative (PFI), which is used for social and economic environmental renewal under the surveillance of public expenditure (Bovaird, 2004). In Australia, there is a common ground definition of PPP, which is that the government runs long-term business relationships, with shared risks and returns, and the private sector becomes involved in financing, constructing, owning or operating public facilities or services (Hodge, 2004). Therefore, the notions of PPP change from one country to another.

Furthermore, Mazouz, Facal, and Viola (2008) noted that authors offered different definitions of PPP in diverse disciplines and used the term to describe a wide range of ideas, working relationships and practices at local and global levels. In addition, according to Ibem, Aduwo, and Alagbe (2015) the absence of a unified definition of PPP is understandable because it is a multi-disciplinary concept, so based on disciplinary or professional ideologies, it has been subjected to different definitions and interpretations. However, one key definition that is widely cited in the literature is that of the Canadian Council of Public Private Partnership (2004), which defines PPP as “A cooperative venture between the public and private sectors, built on the expertise of each partner, that best meets clearly defined public needs through the appropriate allocation of resources, risks and rewards.” Furthermore, several definitions have been used by different scholars, government agencies, and organisations. Table 2-1, provides a list of definitions which can reflect several common characteristic of PPP, namely long-term contracts, shared objectives, shared allocation of risks, shared rewards, cooperative working, and participation in decision-making.

Table 2-1 Definitions of PPP in existing literature (Source: Researcher).

Source	Definition
Francoz (2010)	PPP is a cooperative venture with the private sector to deliver services that are traditionally offered by the public sector and the private sector gains rewards for the transfer risk.
Kelly, J. (2003)	PPP is an arrangement between the public and the private sector where the private sector delivers public services or infrastructure which is usually under the responsibility of the public sector with a clear contract on common goals.
Forrer, Kee, Newcomer, and Boyer (2010)	PPP is an agreement between the private sector and government where the private sector is involved in the decision-making and production of public goods and services, which are traditionally delivered by the public sector, and the risk is shared with the private sector.
Lewis (2001)	PPP is a long-term contractual agreement between the public and private sectors for the construction or management of public sector infrastructure or facilities or to deliver public services by the private sector on behalf of the public sector.
World Bank Institute (2012)	PPP is a long-term contract between government and the private sector for delivering public assets or services where the management responsibility and risk transfer to the private sector.
Klijn and Teisman (2003)	PPP is a co-operation between public and private sectors where the actors of this cooperation provide products or services on the basis of sharing risk, costs, and benefits between actors
European Commission (2003)	PPP is an agreement between parties who agree to work cooperatively together in order to meet a shared objective by joint investment of resources and sharing authority, responsibility, liability, risk, and mutual benefits.
HM Treasury (1998)	An arrangement between two or more entities that enables them to work cooperatively towards shared or compatible objectives and in which there is some degree of shared authority and responsibility, joint investment of resources, shared risk taking, and mutual benefit.
Saudi Ministry of Housing (2017)	PPP can be defined as a long contractual relationship between public and private sectors in order to use the benefits, resources, experience, and the assets and share the risks based on the partnership contract in order to provide and deliver a services.
Bovarid (2004)	PPP is a working arrangement based on a mutual commitment between a public sector organization and any other organization outside the public sector
Chowdhury, Chen & Tiong (2011)	PPP is a partnership with the private sector for the construction, operation, maintenance and delivery of services of public projects.
Bouman, Friperon, Gielen, and Wilms (2013)	PPP is a cooperation between government and private organizations and sometimes could involve voluntary organizations or knowledge institutions in which all actors agree to work in order to achieve a common goal or deliver a specific task while jointly sharing the risk, resources, skills, and responsibilities.

According to Akintoye, Beck and Hardcastel (2008), there are certain common features among the various definitions of PPP, which include the following: PPP involves two or more actors (one from the public and another from the private sector); each participant has a responsible

and stable relationship with the other actors; each participant has to transfer some resources, and share the responsibility. In addition, Forrer, Kee and Newcomer (2010) defined three critical conditions of PPP definitions, which are as follows: first, the contract relationship is a long-term rather than a one-time relationship; second, the private sector participates in both decision-making and in the delivery of public services; and third, the partnership involves a negotiated risk allocation between the public and private sectors.

Moreover, even though the Ministry of Housing in Saudi Arabia (2017) has identified PPP as providing a service in a long contract relationship between the public and private sectors to get the benefit of experience, resources, and assets, with shared risk, based on a partnership contract. For the purpose of this research, the adopted definition of PPP focuses on the partnership, which refers to PPP as a cooperation between government and private organizations, sometimes involving voluntary organizations or knowledge institutions, in which all actors agree to work in order to achieve a common goal or deliver a specific task while jointly sharing the risk, resources, skills, and responsibilities (Bouman et al., 2013). This study will be guided by this definition, not the official Saudi Ministry definition, because of the broad nature of the definition of private and non-profit organization sector engagement, which reflects the type of partnership utilized for affordable housing. Also, for the implementation of PPP in the affordable housing sector, the existence of third sector organizations or non-profit organizations is vital, especially where PPP is implemented for the delivery of affordable housing for low- and middle-income groups. Thus, this definition inspires the aim of this research.

2.2.1 PPP Arrangements

PPP comes in a variety of forms, and even within the same sector, PPP can be implemented with different arrangements. According to the European Commission (2003), there is no set and agreed PPP arrangement that is applied to every project. Also, “even within one country there are a number of forms of partnership, which seem to have developed on a ‘whatever works’ basis formed by the political, regulatory and technical constraints around the project” (Winch, Onishi & Schmidt, 2012. p. 5).

Furthermore, the choice among the variety of different PPP arrangements depends on several factors. According to Akintoye et al., (2008) , the extent of separation of asset ownership and risk allocation between public and private organisations are two factors that can be identified for the selection of the PPP arrangement. Moreover, Delmon (2010) proposes a model to

distinguish between different types of PPP arrangements based on whether they involve a new or existing construction obligation, the source of funding, the type of service being delivered and the source of revenue.

Furthermore, based on the selection of the PPP arrangement, the engagement of the private sector can vary from the provision of services to ownership of facilities (Kwak, Chih, & Ibbs, 2009), and this can be illustrated using the PPP spectrum developed by (Bennett, James, & Grohmann, 2000), as cited in Bult-Spiering and Dewulf (2008). This spectrum describes the range of possible alternatives for the relationship between the public and the private sector for the co-operative provision of infrastructure and services, as illustrated in Figure 2-1, below.

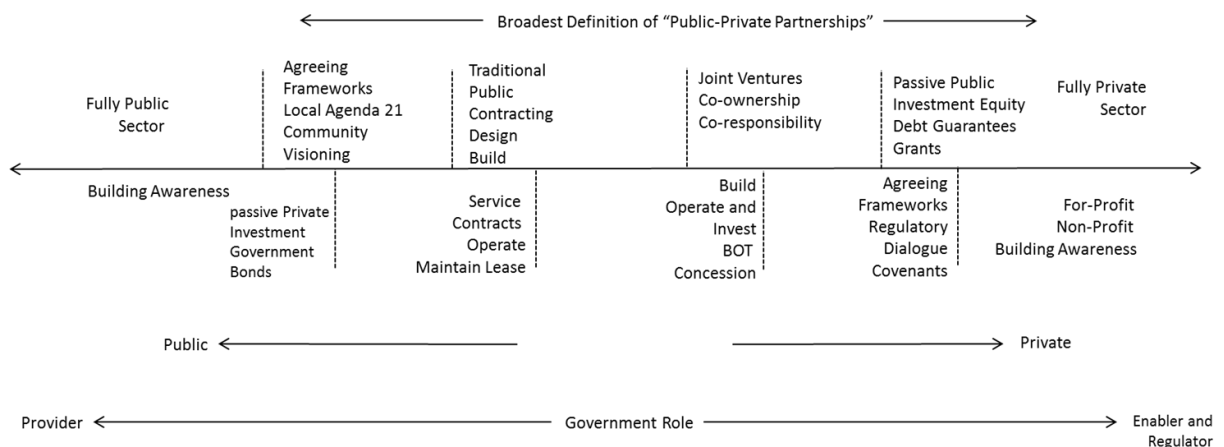


Figure 2-1 Range of PPP Arrangements (Bennett et al., 2000)

Within the above figure, the full provision of services by government, and full privatization, where the private sector takes full responsibility for service delivery, are the two ends of the continuum, and the arrangements in between are described as follows:

1. Building Awareness: Increasing awareness of the advantages of the partnership in enhancing the services for either the government or the private sector.
2. Agreeing framework: Approving the basic frameworks for community or private action through a sharing mechanism
3. Passive private investment: to provide private investment for government in order to run operation of public facilities

4. Traditional public contracting: the public sector purchases services from the private sector or hires a private sector firm to design or build a facility through a contractual relationship.
5. Operation, maintenance and services contracts: contractual relationships where the public sector basically hires a private sector firm to deliver a service for a specific period of time. Within this type of PPP arrangement, the public sector remains responsible for funding
6. Joint Ventures: in this type of the PPP arrangement, the government establishes a company which is owned by both the government and private partners, where both parties share the responsibility for the delivered services. Furthermore, joint ventures require that both parties accept the idea of shared risk and shared reward. Each must be willing to make quantifiable contributions throughout the project development and implementation process.
7. Build Operate Transfer (BOT): under this type of PPP arrangement, private parties provide investment for the building of new facilities or renovation of existing ones by using BOT. Under a BOT contract, a time period of between 10 and 20 years is usually agreed. Private sector finance builds and operates a facility under government-specific standards and ownership of facilities return to the government at the end of this period.
8. Concessions: for a period of 25-30 years, the private sector becomes fully responsible for the delivery of services, including operational, maintenance, fee collection, and management activities. The private sector also bears responsibility for any capital investments needed to build, upgrade or expand the services. On the other hand, the government responsibilities within this type of PPP arrangement are to set standards and regulate for the determined price.
9. Passive public investment: Public institutions provide funds to the private sector through grants, equity investments, loans or guarantees.
10. Community-based provision: this type of arrangement could use any of the above PPP arrangements or other PPP arrangements in order to meet the community's needs. However, the uniqueness of this arrangement is that the government uses the support of and integration with other parties such as non-government organizations and community-based organizations in order to meet the community needs.

Furthermore, Table 2-2 shows different PPP arrangements as identified by Baizakov (2008). Thus, different PPP arrangements can be developed to meet different objectives, and the government chooses among the most suitable PPP arrangements to gain the desired PPP benefits.

Table 2-2 PPP arrangements(Baizakov, 2008)

Buy-Build-Operate (BBO)	Transfer of a public asset to a private or quasi-public entity, usually under contract that the assets are to be upgraded and operated for a specified period of time. Public control is exercised through the contract at the time of transfer.
Build-Own-Operate (BOO)	The private sector finances, builds, owns and operates a facility or service in perpetuity. The public constraints are stated in the original agreement and through on-going regulatory authority.
Build-Own-Operate-Transfer (BOOT)	A private entity receives a franchise to finance, design, build and operate a facility (and to charge user fees) for a specified period, after which ownership is transferred back to the public sector.
Build-Operate-Transfer (BOT)	The private sector designs, finances and constructs a new facility under a long-term Concession contract, and operates the facility during the term of the Concession, after which ownership is transferred back to the public sector if not already transferred upon completion of the facility. In fact, such a form covers BOOT and BLOT, with the sole difference being the ownership of the facility.
Build-Lease-Operate-Transfer (BLOT)	A private entity receives a franchise to finance, design, build and operate a leased facility (and to charge user fees) for the lease period, against payment of a rent.
Design-Build-Finance-Operate (DBFO)	The private sector designs, finances and constructs a new facility under a long-term lease, and operates the facility during the term of the lease. The private partner transfers the new facility to the public sector at the end of the lease term.
Finance Only:	A private entity, usually a financial services company, funds a project directly or uses various mechanisms such as a long-term lease or bond issue.
Operation & Maintenance Contract (O & M)	A private operator, under contract, operates a publicly owned asset for a specified term. Ownership of the asset remains with the public entity. (Many do not consider O&Ms to be within the spectrum of PPPs and consider such contracts as service contracts).
Design-Build (DB)	The private sector designs and builds infrastructure to meet public sector performance specifications, often for a fixed price, on a turnkey basis, so the risk of cost overruns is transferred to the private sector. (Many do not consider DBs to be within the spectrum of PPPs and consider such contracts as public works contracts.)
Operation License	A private operator receives a license or rights to operate a public service, usually for a specified term. This is often used in IT projects.

In relevance to the context of this research, within the implementation of the PPP in the housing sector, the most common PPP arrangement that has been utilized is the Joint Venture (Eggers & Startup, 2006; Jimoh, Emmanuel & Paul, 2015). Within the utilization of the joint venture model in PPP housing projects, some of these units are sold at a previously agreed price, while

others can be sold at market rate in order to maintain both profitability and affordability (Keivani & Waerna, 2001). This type of PPP arrangement has successfully been utilized in both developed and developing countries, because typically within this model, the public sector contributes significant funds and applies significant control over the planning and development stages of the PPP housing project (Moskalyk, 2011).

Therefore, the adoption of PPP has changed the traditional contracts between the government and the private sector. The degree of private engagement and risk sharing vary within the different PPP arrangements. Even with the different PPP arrangements, there are certain main features or components of PPP, which will be discussed in the following section.

2.2.2 PPP Components

Within the different arrangements of PPP, there are certain common features or components. Grimsey and Lewis (2004) identified five elements of PPP as follows: Participants with a commitment to partnership; Relationships – it is essential that these are “enduring and relational”; Resourcing – each party utilizes “something with value” such as skills, knowledge and resources; Sharing, responsibility and collaboration between different parties; and Continuity, under a contractual framework with a clearly defined role and the presence of certainty and trust. In addition, another study, conducted by Hodge and Greve (2007), defined “five families of PPP”: institutional co-operation for joint production and risk sharing; long-term infrastructure contracts; public policy networks; community and civil society development; and urban renewal and downtown economic development.

Furthermore, another study by Osborne (2002) summarises five main dimensions or components of PPP: the first is the aim of the partnership, its purpose, and whether it is strategic or project driven. The second component is the fundamental groups and the structure of their relationship in the partnership and activities over time: Who is involved within the partnership? The third is the timing or stage of development of the partnership process and changing relationships and activities over time. The fourth component is where the spatial dimension or the context of the partnership is considered. The fifth and final component is the implementation mechanism, or how the activities are carried out. Table 2 -3 shows these components of the partnership.

Table 2-3 Components of Partnership (Osborne, 2002)

Range/examples	Components	Range/examples
Purpose		
Exogenous (external resources) Employment creation Single project Strategic	Focus Aims Range of activities Level	Endogenous (internal resources) Employment redistribution Long-term programme Programme cooperation or one-off project collaboration
Who is involved		
Public agencies Formal (legal contracts-general agreements) Top-down Unequal power	Range of actors Structure Process of mobilization Power relationship	Private, voluntary , “Third sector” Informal (overlapping networks) Bottom-up Fair power relationship
When		
Pre-development/development Close partnership	Phase Stage Decision Points	Operation Continue partnership
Where		
Geographical area (e.g. small urban area)	Area/group	Client group (e.g. young unemployed in the region)
How		
Stand-alone partnership Organization	Implementation mechanisms	Agreements influencing existing services

Therefore, these common PPP components make private sector interaction with the public sector different from the traditional contract. The following section will describe the PPP structure as well as the traditional contract.

2.2.3 PPP Structure

Unlike traditional contracts, PPP is complex, with a variety of different stakeholders. Within a traditional procurement contract, the government specifies the terms and conditions and the specific standards of the service or project required, and then asks the private sector to bid. The selection is then based on the most cost-effective bid. Furthermore, within a traditional contract situation, the government might not include the private sector in the designing process, financing, or operation of the project. After awarding the project, the government works to monitor the project and ensure that the specified standards are met and the project is implemented in a time-efficient manner (Forrer et al., 2010). Figure 2-2 illustrates the private sector participation within a traditional contract context.

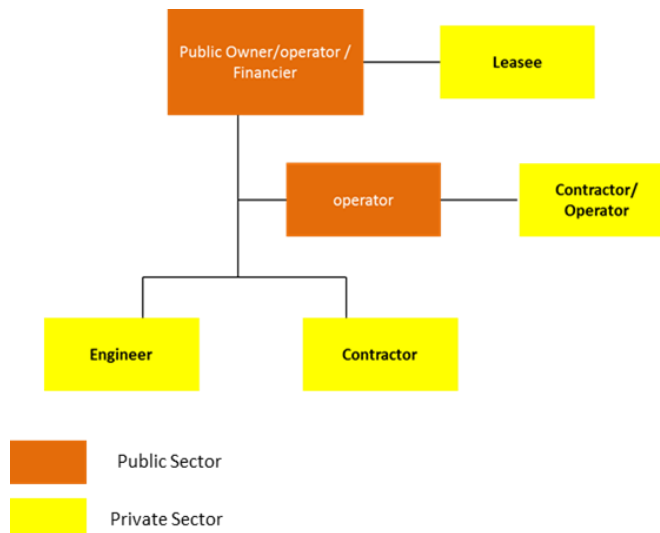


Figure 2-2 Private involvement with Traditional Contract (European Commission, 2003).

In contrast, the typical PPP structure involves arrangements and relationships among a number of parties, as illustrated in Figure 2-3 (Gunawansa, Hoque, & Bhullar, 2012; Quium, 2011). Within the PPP structure, the government establishes a contract with a project company called a special purpose vehicle (SPV): this could be established by a single company or a consortium of companies in order to deliver services of a specific standard. The SPV makes a contract with a private firm for design, construction, operation, and maintenance. Furthermore, the PPP structure also includes a lender and equity investor who are responsible for the long-term finance of the project. (This could be a commercial bank, where the equity investor is provided by the contractor that is involved within the PPP project, or it may include a third party) Figure 2-3 illustrates the typical PPP Structure. In housing and urban PPP projects, it is vital to include any interest group or non-profit organization that has a strong opinion about the project's value for the public (UN-Habitat, 2011).

Therefore, unlike the traditional contract, where the government works as a finance developer, the structure of the PPP could justify its utilization for the delivery of affordable housing where the government builds relationships with contractors, lenders, equity investors, and in some cases third sector organizations to overcome the housing challenges.

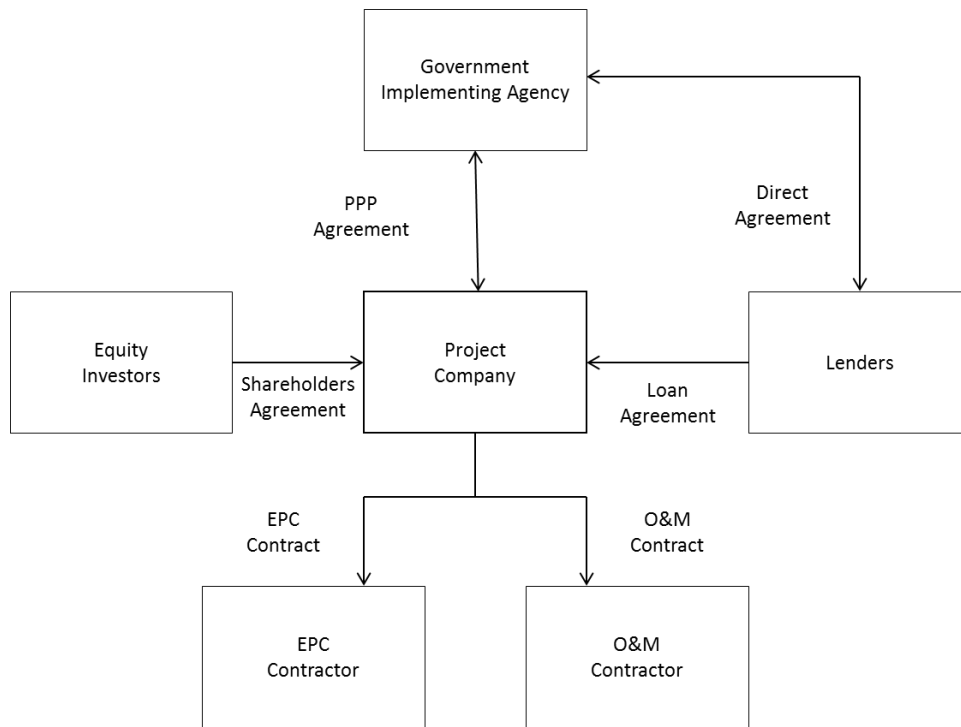


Figure 2-3 Typical PPP Structure (The World Bank, 2012)

2.2.4 PPP Globally

Internationally, PPP as a model for the delivery of public goods and services is becoming increasingly important. Government decision-makers often regard PPP as a tool to bridge the gap of the increasing demand for services and infrastructure; to provide technical expertise, to cover financial deficit, to encourage innovation, and to use expertise from the private sector to solve complex public problems (Forrer et al., 2010). In both developed and developing countries, PPP has been adopted in various sectors.

In the UK, PPP is widely viewed through the Private Finance Initiative (PFI), which was first announced in 1992 by the Conservative government (Yescombe, 2011). The philosophy of the PFI is that it intended to convert government departments into consumers of services from the private sector instead of being the owners and operators of assets. Furthermore, instead of asset builders, the private sector becomes long-term services providers, and becomes responsible for the design, construction, finance, and operation of the assets in order to deliver the services needed by the public sector (Ahadzi & Bowles, 2001).

For example, the adoption of PPP/PFI in the NHS is not only to provide financial capital, but also to use the full range of private sector management commercial skills, and it has also been used for other sectors like transportation and education (Li & Akintoye, 2003). Furthermore,

the UK is widely viewed as the country with the most extensive experience with PPP (or PFI, which is an equivalent term for PPP in the UK). For instance, during 2003 and 2004, the UK was the country with the largest PPP investments (Kwak et al., 2009). In addition to the health sector, PPP in the UK has been used in many other sectors, including Education, Transport, Custodial Infrastructure, Public Building, Housing, Utilities, and Defence and IT facilities (Hodge, Greve & Boardman, 2010).

PPP has also been utilised in a variety of other European contexts, including France, Portugal, Spain and Italy. Between 1990 and 2009, more than 1300 PPP contracts were signed within EU countries (Iossa & Martimort, 2015). Another example of developed countries using PPP in different sectors is Australia. The earliest stages of PPP implementation in 1990 were limited to toll roads, water and power plants. In the mid-1990s, the implementation of PPP was expanded to include sea ports and sports stadiums, and in the late 1990s PPP implementation expanded again to include airports, education and the defence sectors (Crump & Slee, 2005).

In the USA, PPP was initially related to the use of private sector funding for educational programmes; later, in the 1950s, it was used to fund utilities, but it has come into wider sectors since the 1960s to include urban renewal. In addition, services delivered through PPP in the USA include solid waste disposal, street construction, facilities management and operating public schools, architecture services, and legal consultancy. Furthermore, PPP was used to produce housing in urban areas through housing assistance programmes by the federal government and Federal National Housing Mortgages Associations. This programme was highly effective (Akintoye & Beck, 2009).

However, PPP implementation is not limited to developed countries. Many developing countries' governments consider the PPP concept as an innovative approach to meet huge infrastructure gaps and deliver services (Bouman et al., 2013). Within developing countries, PPPs have been implemented in various sectors, including infrastructure, manufacturing and services (Jamali, 2004). Also, within the Gulf Cooperation Council (GCC) countries, which consist of Saudi Arabia, the United Arab Emirates, Bahrain, Qatar, Kuwait and Oman, PPP has been used in the development of infrastructure and the delivery of public services (Butcher & Haque, 2016). According to Alsadi and Abdou (2013), more than 100 PPP projects in the GCC countries have been completed in the last ten years in various sectors, including independent water and power projects (IWPPs), roads and railway networks, airports, education and healthcare. Recently, PPP has also started to be utilised for the provision of social housing.

Markab (2012) distinguishes over 50 countries around the world that have utilised PPP, and compares this with the level of PPP success according to four attributes as follows: well-defined PPP policies, well-functioning PPP units with clear authority and responsibility, accurate tracking of successful PPP projects in various sectors, and access to commercial finance. Figure 2-4 shows the PPP stages within different countries.

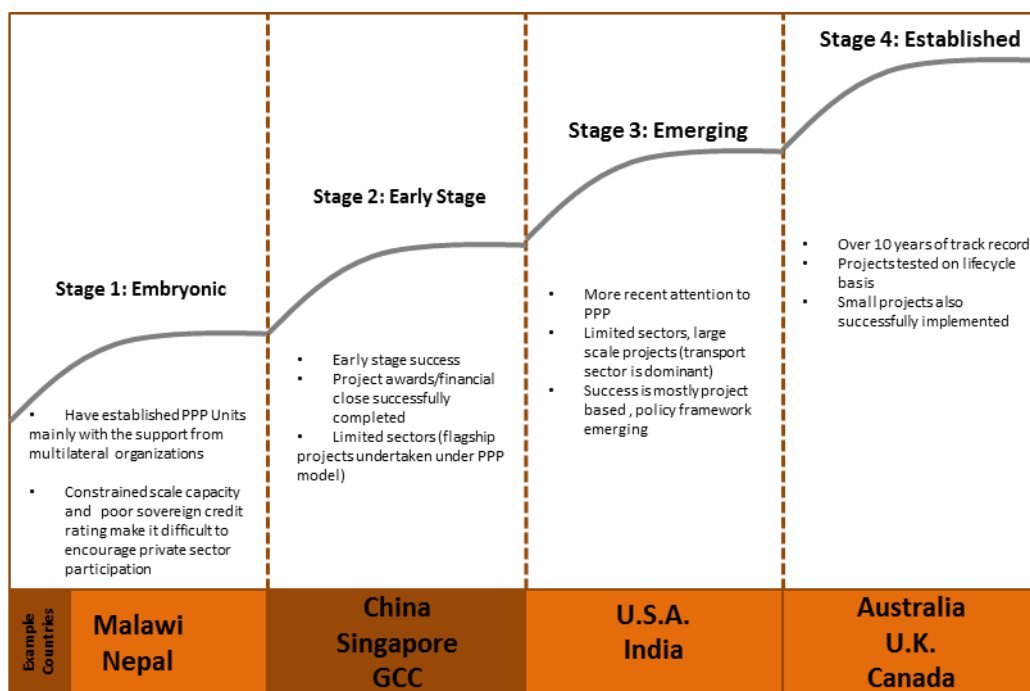


Figure 2-4 PPP stages in different countries (Markab, 2012)

From the above figure, it can be seen that PPP in the Gulf Corporation Countries (including Saudi Arabia) is still at a relatively early stage. Hence, it is the intention of this research to explore PPP within the housing sector in Saudi Arabia, with the aim of understanding how PPP could contribute towards improving the delivery of affordable housing for middle-income households, and to develop a framework for utilising PPP arrangements in Saudi Arabia, especially where the PPP is in the earlier stage of implementation.

Up to this point in the literature review, the various definitions of PPP have been discussed, and the arrangement, components, and structure of PPP have been reviewed. In addition, the global adoption of PPP has also been highlighted in order to achieve an understanding of the PPP concept. The following section will describe the utilization of PPP as a mechanism for the delivery of affordable housing.

2.3 PPP in Affordable Housing

PPP has emerged as a mechanism for the delivery of affordable housing to increase the efficiency of the different stakeholders within the housing market. Governments concentrate on enabling the environment to increase the effectiveness of the housing market, which is known as the “Enabling Approach”. This approach is important in improving the performance of the housing market by encouraging all stakeholders in housing provision, which include public institutions, private developers and third sector organizations (Greene & Rojas, 2008; Keivani, Mattingly, & Majedi, 2008). Moreover, the efficiency of the enabling approach increasingly relies on the level of success of the PPP (Hassan, 2011; Sengupta, 2006).

Since 1980, for many international housing organizations and in many developing countries, the enabling approach has become a reference point for housing policy. Furthermore, this approach helps to use all the actors’ potential resources to enhance the production and improvement of housing (UN-Habitat, 2006). It also underlines the fact that government should not act as a direct provider of housing, but rather should create an enabling environment to enable the housing actors to work more effectively (Hassan, 2014). In addition, within such partnerships in housing, the enabling approach can be identified as “a set of comprehensive policy measures for developing the housing sector as a whole by enhancing the capacities of land and housing markets” (Keivani et al., 2008, p.1826).

Furthermore, in PPP housing projects, government is able to concentrate on the provision of enabling the policy, regulatory and financial environment for the market to engage in actual provision, management and administration of housing products and services (Ibem et al., 2015). On the other hand, when the government is providing an enabling regulatory and financial environment, the private sector can facilitate optimum performance in the different aspects of housing development (Ibem & Aduwo, 2012).

Therefore, within the adoption of PPP in the housing sector, the role of government shifts from a direct provider to an enabler by working closely with the housing market actors to create the required environment through an enabling approach. Hence, this research will investigate the challenge of the new implementation of PPP as a mechanism for affordable housing delivery for middle-income households in Saudi Arabia. Moreover, within the Saudi Arabian context, the government has announced that it will adopt PPP and shift its role from a direct provider of housing units to an enabler of different stakeholders as part of the Saudi Vision 2030. The

following will explain the rationale for the adoption of PPP as a mechanism for the delivery of affordable housing generally.

2.3.1 Source of funding

One of the major challenges facing the government in providing affordable housing is the lack of finance. Government ability to increase the finance required for middle income housing is limited: so, through the adoption of PPP, the private sector can be considered as a source of funding, providing relief for public funds. Funding is one of the key drivers for PPP adoption by the government (Regan, Smith, & Love, 2010). Moreover, one of the major driving forces behind the use of PPP is to relieve the government's financial burden, especially for governments that are facing funding strains on their budgets (Morallos & Amekudzi, 2008). Therefore, PPP has emerged due to the increasing financial burden of the provision of affordable housing.

2.3.2 Added value

Only if a PPP can deliver public sector services cheaper and more efficiently, meaning with smaller costs as opposed to other options, and with improved quality (and other enhanced output features) can added value exist. Public and private actors add value to each other's performance because their efforts enhance the value of the product or service that is delivered (Steijn, Klijn, & Edelenbos, 2011). The adoption of PPP can add value in several aspects. One aspect of added value within PPP adoption is the allocation of risk. A major driver for efficiency is the transfer of the risk to the private sector, which is best placed to manage this risk by offering a profit incentive to the private sector in return (Grimsey & Lewis, 2002). Another aspect of added value is to increase the value for money, which can be identified as "the optimum combination of whole-of-life costs and quality (or fitness for purpose) of the good or service to meet the user's requirement" (HM Treasury, 2006, p.7, as cited in Mouraviev and Kakabadse (2017)). Furthermore, value for money may be shown in lower construction costs, lower operating costs and even more efficient maintenance in the long run (Kwak et al., 2009). In other words, PPP can lead to cost reductions, since PPP arrangements are set up for the long term (up to 30 years, where investment is spread over the life of the project). For example, one of the reasons for the adoption of PPP/PFI in the social housing sector by the local government in the UK was to gain better value for money by separating the cost of the project in the long run (Grubnic & Hodges, 2003)

Furthermore, Bult-Spiering and Dewulf (2008) identified four aspects of added value within PPP adoption: First, added value in content can be achieved within the project where all different parties are integrated to solve a problem and different coherent functions are realised. Second, added value in the process can be achieved through the combination of the experience and knowledge of the different stakeholders within the PPP schemes. Third, external added value can be achieved: "Through co-operation in PPPs, private actors can influence public activities in these developments and different initiatives can be harmonized". Fourth, financial added value can be achieved by sharing risk, which can lead to improvements to price and quality. Therefore, the different aspects of added value that can be gained through PPP may justify the government's desire to adopt PPP as a mechanism for the delivery of affordable housing.

2.3.3 Increasing efficiency and innovations

PPP could be used to improve the efficiency of affordable housing delivery by bundling the maintenance and operation of affordable housing projects, because the private sector builds, operates and maintains these projects in the long term. According to Kwak et al. (2009), bundling the contracting and maintenance could be a source of efficiency in the PPP arrangement. Furthermore, the adoption of PPP can improve productivity and quality. Private sector participation can lead to substantial improvement in the quality of public facilities and services due to this sector's skills, experience, technology and innovation (Tang, Shen, & Cheng, 2010). Thus, the outcome of the PPP can be delivered more satisfactorily.

Furthermore, this creates economies of scale by motivating the private sector to organize its activities in such a way as to drive efficiencies (UN-Habitat, 2011). PPP which display features of a strong collaborative character may be adopted as an alternative approach to maximise existing resources and competences — or, alternatively, to explore the possibility of innovative approaches, bringing in new resources and competences (Bovaird, 2004). Therefore, the potential for increased PPP efficiency and innovation could justify the rationale for utilizing PPP as a mechanism for the delivery of affordable housing.

2.3.4 Earlier Delivery

One reason for the adoption of PPP is the potential for an earlier delivery of the project. The PPP setup allows speeding up of the implementation and construction of the project because PPP provides strong incentives to finish the project earlier, since the revenue stream begins

when users can be charged at an earlier stage, and these sorts of incentives are absent within the traditional public provision model (Al Saadi & Abdou, 2013). Within the clearly defined and agreed timescale, PPP can provide an effective mechanism for dealing with delay events (EPEC, 2011). Therefore, this advantage of PPP can be used to tackle the waiting list of low- and middle-income group candidates for affordable housing.

2.3.5 More effective policy

PPP increases the opportunity for the participation of other stakeholders in policy development, which could lead to better implementation (McQuaid, 2000). This could be within the various stages of policy: within policy design and planning, policy co-ordination, policy monitoring, policy evaluation and review, and policy implementation (Bovarid, 2004). Within the PPP schemes in housing, the government works closely with different stakeholders, and this could lead to improved housing policies which consider challenges that affect both supply and demand sides. Even though there are different benefits that may be gained through PPP as a mechanism for the delivery of affordable housing, several criticisms have been levelled at PPP for this purpose. These are discussed below.

2.4 Limitations of PPP

With the increasing interest in PPP by different governments internationally, PPP has been criticised in several ways. Several studies argue about the affordability of PPP outcomes, as PPP services are often expensive and not affordable by the poor (Asenova & Hood, 2006; Cartlidge, 2006). By losing control of policy-making with the partnership, citizens or beneficiaries become the subject of profit-making from the private sector rather than the public services ethos. PPP changes relationships: instead of a relationship between government services and citizens, there is now a relationship between private sectors and customers/consumers, and this raises the issue of affordability (Smyth & Wearing, 2002) as cited in Hodge & Greve (2005). This results in commercialization of social service provision and loss of independence in decision-making on the part of government (Ibem & Aduwo, 2012). Furthermore, PPP is frequently subject to renegotiations, and a serious point of criticism is that this will impose an additional burden on the public budget, as the high rate of renegotiations undermines the credibility of the initial bids, and often results in lower performance of the project and reduced quality of service (Voordijk, Sarmento, & Renneboog, 2016).

The efficiency gained through PPP has been attributed to the competitive nature of the market; however, private efficiency is not always better than public efficiency and the efficiency gains need to be justified on a case-by-case basis (Hodge & Greve, 2005). Furthermore, a lack of understanding of the PPP mechanism, knowledge, and skills from both the public and private sectors in some countries where PPP is at an earlier stage can lead to complex negotiation processes, and project accountability may be reduced in PPP projects (Kwak et al., 2009). Other studies argue that government accountability will be affected by the implementation of PPP because of the need for commercial confidentiality by the private sector (Moskalyk, 2011).

However, the benefits brought by PPP justify the desire for PPP to be integrated within the Saudi 2030 vision. While there are various criticisms of PPP adoption, these criticisms differ from one country to another. The following section will therefore present the international experiences of PPP in affordable housing and identify the factors that contribute to the success or failure of PPP implementation in affordable housing.

2.5 International Experience of PPP within Affordable Housing

In order to investigate the challenges that face that implementation and the potential success of PPP schemes in affordable housing in Saudi Arabia, this section will explore PPP as a mechanism for delivering affordable housing from the international context. The aim of this section is to explore the enabling factors for the implementation of PPP in affordable housing. According to Ibem & Aduwo (2012) despite differences in economic and socio-political contexts between different countries, PPPs have performed differently in housing provisions. Furthermore, according to Cheung, Chan, and Kajewski (2012), “for countries that are new at adopting PPP, it is even more important for them to identify the success factors in order to maximize the advantages of this method and to reduce the risks for all concerned parties” (p.46).

PPP in affordable housing has been adopted in developed countries such as the UK (National Audit Office, 2010), the USA, Canada and Australia (Susilawati & Armitage, 2004), and also in developing countries like Malaysia (Ong and Lenard 2002; Abdul-Aziz and Kasim, 2011), the Philippines, Turkey, India, (UN-Habitat, 2006), Nigeria (Ibami, 2011), Malawi (Manda, 2007), Egypt (Mekawy, 2014), and Bahrain (Alsaadi & Abdou, 2013). The following subsection will explore the implementation of PPP in the delivery of affordable housing in different international contexts and will highlight and discuss the following: the objective of the adoption of PPP in the housing sector, the role of the different stakeholders, the PPP arrangements

adopted within the implementation, and the factors that influence the success or failure of PPP in housing schemes in these different international contexts.

2.5.1 United Kingdom

PFI/PPP was first implemented in the social housing sector in the UK in 1999 (Hodges & Grubnic, 2005). It was introduced as a mechanism to address the growing problem of investment in social housing due to the rising challenge of restriction of constructing new social housing and failure to refresh and upgrade existing social housing stocks by the local authorities (Garnett, 2000). Furthermore, according to the National Audit Office (2010), PFI has been implemented in the social housing sector, where local authorities have a long-term contract with the private sector for delivering and maintaining social housing to reach specified standards. The cost of this is paid by the local authorities on an annual basis and the main benefit is to ensure the long-term maintenance of housing stock.

Furthermore, the objectives of the adoption and implementation of PFI in the housing sector have been identified as follows: minimize the cost and time of construction, reduce traditional contractor impact, improve quality, spread the cost over the lifetime of the project, increase the benefits of the resources and gain innovation (Loraine & Williams, 2000). Another study by Berry, Whitehead, Williams, and Yates (2006) identifies that the advantage of PFI is as follows: " The intervention of private finance has been a means of increasing private contributions through equity, rent and mortgage payments with the help of subsidy and 'stretching' the supply-side so that they can meet a larger proportion of unmet need through the social housing sector " (p.309).

Furthermore, the main stakeholders in PFI schemes are the following: the Treasury, which is responsible for overall PFI policy and for the allocation of PFI Funding; the Department for Communities and Local Government, which is responsible for housing policy, governance and for allocating project funds; the Homes and Communities Agency, which is responsible for the management of PFI housing schemes; and the local authority, which is responsible for PFI procurement, contracting with the private sector, and local delivery of the project. Furthermore, the users of social housing services have the right to participate in some decisions about their homes. Figure 2-5, below, illustrates the structure of PFI within the housing sector in the UK (National Audit Office, 2010).

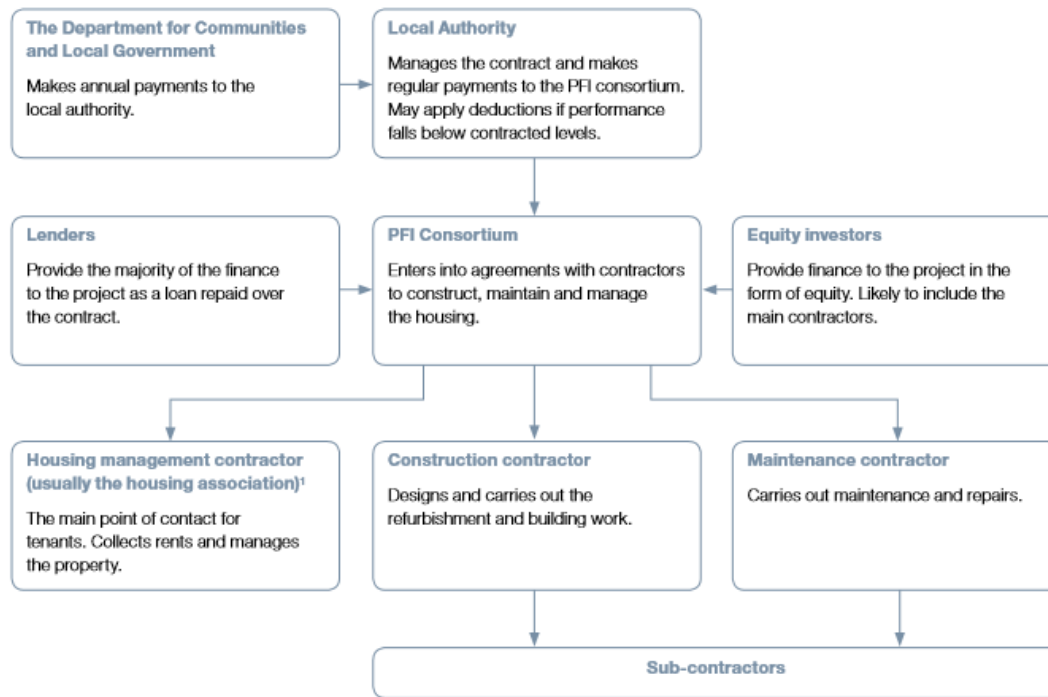


Figure 2-5 PFI structure in Social Housing Sector in UK (National Audit Office , 2010, p. 14)

PFI implementation in social housing in the UK faces several challenges. The high standards of PFI, lack of flexibility and the need for change where the standard contracts need to be approved centrally cause delays for some local authorities (National Audit Office, 2010). Furthermore, according to Grubnic and Hodge (2003), lack of information and trust cause delays in the initial stages of PFI housing projects. Moreover, according to another study by Berry et al. (2006), risks and uncertainties arising from market, regulatory and policy change are challenges to PFI implementation in the UK.

2.5.2 Malaysia

During the third Malaysia plan, the government started the implementation of privatization policies. The Malaysian government has subsequently adopted an enabling strategy in order to facilitate private sector activity to meet low-income housing demand (Muhammad & Johar, 2018). The City Hall of Kuala Lumpur (CHKL) became the first city council to adopt PPP for the delivery of affordable housing. CHKL has moved its role from that of a provider, shifting this role to the market to increase housing ownership and provide more affordable housing (Aziz, Hani, & Musa, 2007). Furthermore, Abdul-Aziz and Kassim (2011) found that the objectives of private sector involvement in the housing sector in Malaysia are to increase value

for money, improve cost certainty, transfer risk, achieve early completion or on-time completion, and impart innovation in design.

The role of the government within the PPP housing scheme in Malaysia includes lower land premiums, infrastructure cost subsidization, faster planning approval, easing planning and housing standards, and concessions from financial contributions to utility authorities (Ong & Lenard, 2002). In addition, the government provides the specification for the PPP housing project (such as types of housing unit, size of housing unit, and standard of the outdoor area) and initial commercial parameters (selling prices for various housing types, planning of the implementation phases, arrangements for the profit-sharing between partners), and allocates risks such as poor sales performance and fluctuation in construction material prices (Kavishe, 2018). On the other hand, the role of the private developer within the PPP housing scheme includes designing, constructing and financing, and providing internal infrastructure, social and public amenities and houses for the various income groups (Bardhan & Barua, 2004).

The government's own projects, joint venture projects, and projects imposed on private developers through planning permission are the three mechanisms adopted by the government to ensure affordable housing delivery in Malaysia (Aziz et al., 2007). According to Muhammad and Johar (2018), PPP in Malaysia proved to be successful: the private sector performance in housing is impressive in terms of the number of housing units completed. In addition, the private sector accounts for over 90% of housing provision and a greater proportion of low-cost housing (Salleh, 2008). Moreover, according to Kavishe (2018), the "cross-subsidy policy" was a key feature of the housing policy where the rich subsidised the poor. This meant that any housing development project had to follow the regulation of developing at least 30% of the houses as low cost housing, whereas the remainder can be for the high and medium income groups.

Aziz et al. (2007) conducted a case study of the Wangsa Maju project in a PPP housing development in Malaysia, which includes 7,791 low-cost housing units, making a significant contribution towards addressing the housing shortage that had arisen. In addition, the implemented CHKL housing PPP scheme delivered 80,000 low-cost housing units within three years. This indicates that a significant number of housing units within these schemes successfully provided access for low income groups.

Furthermore, a study by Muhammad and Johar (2018) identified the enabling factors for the successful implementation of the PPP housing scheme in Malaysia as the following: reputable developer, equitable risk allocation, transparency and good governance, stable political system,

availability of financial market/house buyer's demand, action against errant developers, consistent monitoring, trust/communication between parties, a stable political system, and community support. Another study, conducted by Abdul-Aziz and Kassim (2011), reported that the success factors which had the greatest impact on the PPP housing scheme in Malaysia were action against errant developers, consistent monitoring, house-buyers' demand, reputable developers, robust and clear agreement, and constant communication. Therefore, the existence of these different enabling factors led to the success of the PPP housing scheme in Malaysia.

2.5.3 Nigeria

A study by Ibam (2011) found that PPP in housing was introduced in Nigeria to address the growing housing challenge, which is caused by the high number of low-income people, who are unable to gain access to affordable housing. A solution for this challenge was achieved through PPP. In addition, the study identified 14 PPP housing projects, of which about 92.86% were "build and sell" (turnkey) housing schemes, whilst about 7.14% were under a site-and-services scheme (SSS). A joint venture approach was used in these projects, where expertise, risks, resources, and profits are shared between participants. Also, the study showed that PPP in housing provision in Nigeria has provided the smallest number of housing units for low-income earners.

Another study by Ibam and Adouw (2012) found that PPP in housing schemes in Ogun State, Nigeria, provided more high-income housing, and did not make a significant contribution to affordable housing. The private sector is involved in funding, construction, management of the housing projects, and determines the actual cost of housing units to ensure a margin of profit and to sustain their interest in PPP housing. On the other hand, the government has a role in providing land, some basic amenities such as access roads, electricity, a regulatory framework, facilitating the process of obtaining permits, approving housing development plans and registering land titles. Table 2-4 shows the role of the partners in the implementation of PPP in the housing sector in Ogun State.

Table 2-4 Role of PPP partners in housing sector in Ogun State (Ibam & Adouw, 2012)

Government	Corporate Private Housing Developers
Provides land at subsidised cost.	Pay for the cost of land and other charges.
Provides access roads and power supply.	Comply with building and planning regulations in the design and construction of the projects.
Sets the target.	Undertake the design and physical construction of housing units.
Plays a supervisory and monitoring role.	Funding of housing project construction work.
Sets standards and ensures compliance.	Creating awareness (advertising) of the projects.
Provides legal and economic policy frameworks.	Marketing and allocation of completed housing.
Creation of awareness of the projects and marketing of completed housing units.	Management of housing estates' agreed charges on residents.
	Set the prices of housing units.

The findings of Ibam and Adouw (2012) reveal that within the supply terms, during the seven years of PPP housing implementation in Ogun State, the output of the PPP housing scheme was 552 housing units, presenting about 7.4% of the average annual housing demand. In addition, the study also found that the government's provision of land, some basic amenities and other incentives appears not to have resulted in significant increases in urban housing units. Furthermore, the cheapest housing units produced by PPP schemes are not affordable. According to Gbadegesin et al. (2016), the effect of the housing crisis in Nigeria remains and the PPP conceptual objectives have not been significantly achieved.

Several factors have been identified within the literature as challenges to the success of PPP housing scheme in Nigeria: lack of national policy on PPP in housing; the absence of local government authorities and third sector organisations in PPP housing provision; the active involvement of private partners in the design, funding, construction and provision of infrastructure; management and allocation of the housing units (the control of the entire PPP housing provision process in the hands of commercial private developers); constraints in the supply of building materials; the funding for the housing projects; the provision of infrastructure; and the conditions of the building industry in Nigeria (Ibem, 2011; Ibem & Adouw, 2012; Gbadegesin et al., 2016). Thus, these factors have hindered the ability of the PPP housing scheme to meet the need for affordable housing.

2.5.4 India

In 1988, the Indian Government shifted its role and adopted an enabling approach by emphasizing PPP as a vehicle for housing delivery. A study by Deb (2016) emphasizes that in order to prevent the growth of slums in India, PPP was introduced as a vehicle for the delivery of affordable housing. The Indian Government's constant endeavours to meet the pressing challenge of providing housing for the public, with a special focus on the poor, led them to experiment with the use of PPP as a delivery mechanism for new housing units for low income people as well as in redevelopment schemes (Parashar, 2014). In addition, according to Sengupta (2006), the adoption of PPP in the housing sector in India aimed to enhance and increase private sector participation by creating conditions that eliminated the legal and regulatory constraints facing the supply of housing and provided appropriate support for investment in the infrastructure.

Within the PPP housing scheme in India, the government role focuses on promoting PPP through incentives for the private sector to make projects profitable and with low financial implications for the public sector. At the national level, the government implements mechanisms available to states and cities to enable the inception, development and delivery of PPP, while the private sector is engaged in financing, constructing, operating and maintaining the housing units. The role of the NGO is non-existent in the Indian PPP housing scheme. The PPP arrangements followed in most cases in housing schemes in India are Joint Ventures and Build Transfer (Parashar, 2014).

Sengupta (2006) found that in PPP housing schemes, at least 10%-15% of the total construction of each project is to be for low and middle-income groups, and purchasing a house under a PPP has generally become more affordable due to state requirements regarding minimum size and sale price for low-income groups. In addition, the study found that the output of PPP housing production has been impressive in terms of cost and quality, but minuscule in terms of numbers.

Several studies emphasise the challenge of the implementation of PPP in the housing sector in India. The following factors have been identified as challenging the implementation of PPP in Kolkata: legislation, high levels of municipal taxes, the formation of PPP, and access to finance, which continues to act as a major constraint to home acquisition by low income families (Sengupta, 2006). In addition, Parashar (2014) found that in the implementation of PPP in housing for low income people in India, several factors increase the risk: these factors are related to the availability of land, clear formulation of the project, and the identification and

allocation of units to beneficiaries. Therefore, despite the challenges, PPP is increasingly viewed as a viable approach for the delivery of affordable housing in India.

2.5.5 Philippines

According to UN-Habitat (2006), the Philippines PPP housing scheme has been successful in providing housing for low-income households by lowering building standards and providing funding so that the housing units could be sold below the housing market price. The role of the National Housing Authority is to provide land, necessary clearances and licenses, development finance from state financial institutions, and technical advice on design and engineering. On the other hand, the private sector roles are land development, constructing, and marketing. There are also three types of PPP housing project: sites-and-services developments, slum upgrading, and new housing unit development. All of these three types of project are under Joint Venture arrangements. To ensure affordability, 60% of the project outcome is mostly sold at a price not exceeding the loan, and the remaining 40% of the project can be sold on the open market (UN-Habitat, 2006). Although the implementation of PPP in the housing sector in the Philippines has been reported in several studies (Ibem, 2011; Ibem & Aduwo , 2012), the literature does not report the factors that influence the implementations of PPP in the housing sector in the Philippines.

In sum, the findings from the international studies reviewed suggest that in countries where PPP in housing has been adopted, it has produced different results. The common objective of PPP in the housing sector is to shift governments' role and adopt an enabling approach, and to work closely in partnership with the private sector to face the challenge of housing and provide access for the low and middle income groups. Furthermore, it can be anticipated that the common PPP arrangements that are adopted within these different international contexts are joint ventures where the government applies significant control over the planning and development stages of the PPP housing scheme. However, the role of the government and the private sector in the PPP housing scheme differ between the five countries discussed above, leading to the failure of the PPP housing scheme in some cases. For example, in the Nigerian experience above, the proportion of the PPP housing project designated for low income buyers was limited, because the government allowed the housing developer to set the housing unit price as an incentive for their participation. As a consequence, they targeted high income people to maximize their profit, and as a result, the PPP housing for low income people in Nigeria failed.

The different implementations of the PPP housing scheme within different contexts are influenced by various factors. PPP in the social housing sector in the UK is challenged by the PFI's lack of flexibility and high standards, high risk, trust, and delay. On the other hand, from the Malaysian experience, it is clear that the success of the implementation of PPP as a mechanism for the delivery of affordable housing is a matter of government incentives, high controls that ensure the profitability for the private sector, affordability and access for low income people, detailed groundwork, the existence of strong policies and clear objectives before the implementation of the strategy.

Within the Nigerian context, funding for housing projects, the provision of infrastructure and the conditions of the building industry in the country, as well as of the high control of the PPP housing scheme in the hands of the private sector, are challenging factors that hinder the success of the PPP housing project. On the other hand, from the Indian experience, one of the major success factors in the PPP housing scheme was high control of the price of the PPP housing units by the government, making housing units for low income people generally more affordable. But access to finance continues to act as a major constraint for the PPP housing scheme in India.

Therefore, it is clear that from the various international studies discussed above that there is a need to identify the enabling factors that influence the success of the implementation of PPP for the delivery of affordable housing. Hence, the third objective of this research is to identify and examine the critical factors that contribute to the success of PPP in the delivery of affordable housing. The next section will discuss the enabling factors for the successful implementation of PPP in the housing sector.

2.6 Enabling factors underlying the success of PPP in housing sector

Governments often lack enabling factors to implement PPP successfully. The implementation of PPP for affordable housing faces a lack of various enablers, and these differ from one country to another. Enabling factors minimize the risk of failure in PPP housing schemes, if they are identified and worked upon from the initial stage of the scheme. The identification of such enabling factors could assist the establishment and performance of PPP for the delivery of affordable housing, and specifically, it is necessary to determine the extent to which such enablers lead to the successful implementation of PPP for affordable housing delivery.

2.6.1 Government Support

To achieve the desired output from the implementation of PPP in the delivery of affordable housing, effective government support is essential. Several studies reflect that the government's role within PPP implementation is one of the major factors that contribute to the success of PPP (Biygautane et al., 2016; Kwak et al., 2009; Osei-Kyei & Chan, 2017b). Furthermore, "increased participation by the private sector and emphasized government's role in creating conditions to boost housing supply by eliminating legal and regulatory constraints and supporting appropriate infrastructure investments" (Sengupta, 2006, p. 449).

Several researchers have attempted to identify and determine the roles of government in the implementation of PPP. A study by Kwak et al. (2009) identified five main roles for the government within the partnership as follows: creating a positive investment environment, establishing an adequate legal framework, providing supportive authorities, selecting a suitable concessionaire, and being actively involved in the life cycle of the projects. Another study by Pessoa (2006) identified four main roles of government in PPP, namely overcoming market failures, providing access for poor and under-served rural populations, implementing appropriate regulations to ensure quality, and controlling costs. Furthermore, the role of the government in PPP housing schemes can be identified as follows: first, to create a suitable policy framework and ensure access to land, which can lead the private sector in increasing its capacity to deliver decent and affordable housing; and second, to create an enabling environment, which is vital in enhancing private sector participation in housing provisions (Ibem, 2011; Payne, 1999; UN- Habitat, 2006). Therefore, within government support, there are five main roles that can contribute to the successful implementation of PPP in the delivery of affordable housing, namely the legal framework, government guarantees, expertise, an enabling environment, and ensuring access to finance among the poorest. These roles will be discussed in the following section.

2.6.1.1 Favourable and efficient legal framework

An effective legal and regulatory framework would help to ensure strong private sector participation in PPP for the delivery of affordable housing. The legal and regulatory framework can be defined as "the laws and regulations that underpin the PPP program—enabling the government to enter into PPPs, and setting the rules and boundaries for how PPP are implemented" (World Bank Institution, 2012. p. 62). These may include PPP-specific

legislation, public financial management laws and regulations, and/or laws and regulations particular to specific sectors.

Furthermore, according to Farquharson and Yescombe (2011), private sector investors inevitably critically analyse the legal framework (and regulations) and its ability to ensure the effectiveness of long-term PPP contracts. Moreover, a fair and efficient legal framework is a key factor for successful PPP project implementation (Cheung et al., 2012). In addition, linking the public and the private sector, which are often conflicting and operate in competition, in an interactive network within the PPP requires strong democratic states with robust financial institutions and powerful legislative muscle to level the playing field for all stakeholders and regulate unequal power relationships (Balasooriya, Alam, & Coghill, 2010).

Governments need to ensure that preparations are made for private sector participation by developing an appropriate legal, regulatory, institutional, and contractual framework, and to ensure that this does not create excessive barriers to private sector participation. According to Hodge and Bowman (2004) a government should be “subject to the ordinary laws of the contract [that] formalizes commercial agreements and provides both public and private parties with clearly defined boundaries of their rights and obligations, while ensuring comprehensive avenues of redress for breaches” (p. 26). For example, within the Nigerian experience, one of the challenges to the success of PPP to meet the needs of the low-income group was the lack of a uniform National Policy for PPP (Ibam, 2011). Therefore, the provision of administrative, economic and legal frameworks by the government is critical to ensuring the effectiveness of all the participants within the PPP housing schemes.

2.6.1.2 Government Guarantees

Government guarantee is one of the critical factors identified by the literature to contribute to the success of PPP. According to Kwofie, Afram and Botchway (2016), the government guarantee is critical to the success of PPP in the delivery of housing. Parties in PPP arrangements often have different objectives; while the private investor aims to minimize risk and expects high returns on investment; the public partner rather seeks to maximize social benefits (Roberts & Chan, 2016). In addition, to increase the attractiveness of a PPP project to private investors, "government may need to provide project-specific assistances and/or guarantees, such as the guaranteed minimum revenue and tax reduction for a certain time period" (Kwak et al., 2009, p. 59).

Within the principle of government guarantees, there are two components, namely providing guarantees and multi-benefits objectives (Hardcastle, Edwards, Akintoye, & Li, 2005). However, balancing the different interests of the various stakeholders is one of the critical factors that contribute to the success of PPP schemes (Hu, Chen, & Zhang, 2014). Furthermore, according to UN-Habitat (2006), the most successful PPP in low-income housing, which brings concrete benefits to all partners, is essential for the commercial private sector and requires an adequate return on its time and investment. Thus, it is important to guarantee the benefits of the different partners without harming the interests of the poor.

The government is assumed to offer a high level of guarantee for the PPP project in order to ensure that it was economically feasible, but not low to miss the benefits of the community (Takashima, Yagi, & Takamori, 2010). For example, in Nigeria, the cheapest housing units produced by PPP schemes are not affordable because of the high control of the price of housing units by the commercial private sector to protect their benefits, which harms the interest of the poor (Ibem & Aduwa, 2012). Therefore, within the role of the government in the implementation of PPP housing schemes, it is essential to provide guarantees and ensure the benefits of the different stakeholders.

2.6.1.3 Adequate PPP skills and expertise

The existence of expertise within PPP is often a challenge, and influences the implementation of PPP projects. Expertise is critical in determining whether public-private partnerships will succeed (World Bank, 2009). According to McCann, Aranda-Mena, and Edwards (2013), the absence of expertise within the implementation of a PPP can lead to tensions between its partners, and could lead to service delivery underperformance. In addition, lack of expertise with regard to the technicalities involved in the application of PPP can be considered as a barrier to the successful implementation of PPP projects (Okoye & Tennyson, 2012). Specially, in developing countries, government agencies' lack of the management skills and capacity to handle the complexities of PPP contracts successfully is a challenge (Akintoye, 2015).

Moskalyk (2011) identified nine areas of expertise that are required as government in-house skills for the implementation of PPP, namely negotiation skills, mediation, arbitration, contract law, project management, performance auditing and quality control, public process, private sector finance, and risk management. However, the lack of skills and expertise will eventually

result in poor PPP project management and poor planning of the PPP project, as well as poor risk identification, allocation and management (N. Kavishe, Jefferson, & Chileshe, 2018).

Within the PPP housing project, several studies find that public partners' lack of knowledge and inadequate PPP skills are among the challenges that face the implementation of PPP housing projects (N. Kavishe & An, 2016; N. Kavishe et al., 2018; Mekawy, 2014; Muhammad & Johar, 2018; Yuan, Guang, Wang, Li, & Skibniewski, 2012). Also, Muhammad and Abubakar (2019) found that inadequate expertise within the public sector for monitoring and controlling private developers has limited the success of the PPP housing scheme. Therefore, lack of expertise within public-sector institutions is a factor challenging the success of PPP housing projects.

2.6.1.4 Enabling Environment

Within the adoption of PPP in the housing sector, the government works as an enabler and not as a direct provider of housing units. According to Kwak et al. (2009), the willingness of private investors to participate in PPP depends greatly on the environment in which these projects are operated. Under this approach, the government's role is reduced and redirected to only focus on activities which strengthen the abilities of the private sector (Umoh, 2012). Within the "enabling" environment, the government works to enable the housing market to work.

Furthermore, Mekawy (2014, p. 107) advises a "focus on the challenges emerging from the ambiguity of roles in the market enabling approach; what policymakers should do and the appropriate level of government involvement". In addition, a number of enabling instruments can be used to eliminate both the constraints of the demand (mortgages, subsidies, and property rights) and the supply side (land, organizing the building industry, infrastructure; labour; building materials (Cao & Keivani, 2014). Thus, the private sector capacity can be enhanced to include large segments of the low-income group as well as middle-income households and overcome market failure. Therefore, it is apparent that for PPP to work in the delivery of affordable housing, an enabling environment is essential as a part of the government role to remove the constraints from both the supply and the demand side of housing within the housing market.

2.6.2 Availability of financial market

One of the motivations for utilizing PPP as a mechanism for the delivery of affordable housing is to provide finance where the private sector can be consider as a source of funding, in order

to provide relief for public funds. However, issues relating to project financing are the key factors challenging the success of PPP housing projects (Hassan, 2011; N. Kavishe & An, 2016; Mekawy, 2014; Muhammad & Abubakar, 2019; Yuan et al., 2012). In addition, according to Kavishe and An (2016), the lack of participation of financial institutions will lead to delays, poor performance and unsuccessful delivery of PPP housing projects.

Furthermore, the availability of a mature and efficient financial market with a diversified range of financial products and the benefits of low financing costs can be a motivation for private sector participation in PPP projects, as well as creating long-term demand for products and services (Muhammad & Johar, 2018). Also, it will create successful affordable housing developments, financed at below-market interest rates (N. Kavishe & An, 2016). However, according to Moskalyk (2011), governments are struggling to secure revenue support streams for PPP housing projects due to strict credit conditions implemented by banks, which make it more difficult for investors to borrow money. Therefore, the availability of the financial market is a critical factor for the success of the PPP housing scheme.

2.6.3 Effective Bureaucracy

Inadequate government bureaucracy has been considered as a challenge faced in the implementation of PPP. Bureaucracy can be identified as “the set of regulations drawn by governments to control activity, usually in large organizations and governments. It is represented by a standardized procedure that dictates the execution of all processes within an institution, division of power, hierarchy and relationships” (Tierean & Bratucu, 2009, p. 245). A unique challenge faced by PPP is the horizontal relations in PPP arrangements (Forrer et al., 2010). Furthermore, the political culture and bureaucracy are essential for PPP policy design, since the interaction of political parties, tradition, and attitudes may affect the design and implementation of PPP, especially in developing countries (Khanom, 2010). In addition, according to Savage and Dasgupta (2006), in urban infrastructure development, the bureaucratic complexities increase much more because of the overlapping roles and responsibilities between state government and urban local bodies. However, in order to overcome the bureaucracy and red tape, individuals and businesses will be forced to use their connections or even pay bribes (Hertog, 2010).

Furthermore, Biygautane et al.’s (2018) study findings emphasised that within three states – Kuwait, Qatar and Saudi Arabia – the inefficiency of government bureaucracies is another hurdle for PPP implementation. This is especially true in Saudi Arabia, where contracts

exceeding 5 million Saudi Riyals (US\$1,333 million) need to be approved by the Ministry of Finance, which entails a costly, long and wearisome bureaucratic process for the private partner. PPP requires an effective and accountable bureaucratic system that facilitates the administrative, legal, and financial complexity of managing PPP contracts. However, an efficient bureaucratic system is basically dependent on straightforward communication channels among the different government-related entities. In this respect, speeding up licenses and approval for the PPP project will reduce the risk of delay, which may lead to reduced transaction costs for PPP administration (Biygautane et al., 2018). Within the implementation of the PPP, the public sector needs to enhance the quality of the administrative system and reduce red tape and other bureaucratic processes (Mouraviev & Kakabadse, 2015).

2.6.4 Real estate developer capability

In order to ensure the success of the PPP housing scheme, the participation of reputable, strong, capable developers with strong technical and financial competency is essential. Strong private consortium is one of the critical factors that influence the success of PPP housing schemes (N. Kavishe & An, 2016; Muhammad & Rimi Abubakar, 2019). In addition, strong private partner focus in the private sector facilitates the delivery of PPP projects (Chan, Lam, Chan, Cheung, & Ke, 2010). Furthermore, the stronger the private consortium within the PPP project, the more experience the project will gain, and that will be reflected in terms of designing and developing the project more efficiently and effectively, with the optimum capital outlay structure design (Almarri & Boussabaine, 2017a).

Furthermore, within a PPP project, a capable and strong private partner implies that the private consortium possesses the expertise and the capability to raise massive funds to execute PPP projects within the required budget and time-frame (Osei-Kyei & Chan, 2017b). Also, Abdul-Aziz and Kassim (2011) found that a strong private partner has a positive effect when present, and a negative effect when absent, because within the PPP contractual relationship, private partners take responsibility for all or part of the government's role. Thus, the existence of a 'reputable developer' within the PPP is vital (Muhammad & Johar, 2018).

Furthermore, according to Moskalyk (2011), identifying the right partner by considering the candidates' years of experience and shared vision of the PPP project goals is a critical factor that influences the PPP project's success. However, for public authorities, selecting the lowest bidder in the tendering process is not always the best method for partner selection. Therefore, towards achieving project success of the PPP housing scheme, a strong private partner is

essential, and to minimize the risk of project failure, government should ensure that the private sector partners are financially capable and technically competent to deliver PPP housing projects.

2.6.5 The role of third sector organizations and popular participation

The third sector includes organisations that have an objective for the promotion of the good of their members ("community-based organisations", or CBOs), institutions which support and mediate on behalf of these organisations ("non-governmental organisations", or NGOs), and housing organisations which are dedicated to providing and managing the non-market housing stock (Mekawy, 2014). Third sector organizations can play a significant role in the success of PPP for low-income housing, especially when poor people are exposed to private sector interest (Un-Habitat, 2006).

Furthermore, third sector organizations can act as mediators between the community and governmental authorities in partnerships (Muraya, 2006). It has been proved that strong NGOs have the ability to mobilise poor communities and build their capacities by helping them to organise, articulate their needs, evaluate their resources, plan and implement their programmes, and maintain their homes (Mekawy, 2014). For example, Ibem (2011) found that the absence of third sector organizations was one of the factors hindering the success of PPP housing schemes in meeting the needs of low-income people. Therefore, third sector organizations may work as facilitators to meet the needs of low- and middle-income people within PPP housing schemes.

2.6.6 Cost and access among the poorest

The development of affordable housing is costly and capital-intensive, particularly for long-term lenders and private developers. According to Black (2014), the financier of the project and the real estate developer expect their financial return in terms of time, money and expertise, and cover the assumed risk. On the other hand, the public partners expect the political and social goal from PPP schemes. Thus, the challenge within the implementation of PPP schemes is to create balance between financial and social returns.

Achieving this balance is a crucial challenge within the implementation of PPP in affordable housing. In the literature, several studies argue about the affordability of PPP outcomes (Smyth & Wearing 2002; Bovaird 2004). According to UN-Habitat (2006), the difficulty is in preserving both profitability and affordability in PPP (and very few partnerships have managed

to preserve a balance between these two) in order to ensure access among the low-income groups within a significant scale.

There are differences between the goals of the public sector and the private sector, which fundamentally oppose each other: while the public sector strives to protect the community interest, the private sector focuses on economic gain (Moskalyk, 2011). However, according to Gbadegesin et al. (2016), the effectiveness of PPP in housing is not guaranteed as long as low-income people cannot “acquire housing rights” from the PPP schemes. Therefore, PPP requires an effective design mechanism in order to achieve the desired revenue for the private partner and maintain the public interest (Angelides & Xenidis, 2009).

For example, in Kolkata, low-income families lack access to finance, which is considered as a major constraint: in particular, the absence of a mortgage finance scheme for potential buyers of PPP units will conflict with the partnership’s goal of delivering affordable housing to those in need (Sengupta, 2006). In addition, Parashare (2014) found that in PPP housing in India, within the allocation and cost to the beneficiary for the “purchase of units, given that their incomes are low, the authorities further find it difficult to facilitate loans despite several low-interest housing schemes” (p.534). On the other hand, within the Philippian PPP scheme, the government applied a ceiling price for the outcome of the housing PPP project, which did not exceed the beneficiary’s loan, in order to ensure affordability (UN-Habitat, 2006). Therefore, ensuring access for low- and middle-income households within the PPP housing schemes and covering the cost of the housing units while also providing a profit margin and access among the poor for the private stakeholders is a challenge that needs to be considered to achieve the desired goal of PPP adoption.

2.6.7 Integration and coordination

One of the factors leading to the success of PPP schemes is co-ordination among all partners and integration under a single policy framework. In different aspects of housing development, different sectors have a comparative advantage to facilitate. Also, greater co-ordination of housing policies is needed at both the national and the municipal level. At various stages of the housing process, a wide range of public agencies are involved in providing clearances, approvals, licences, and permits, and without co-ordination and integration, there will be delays and duplication, which presents an obstacle to the success of PPP (Un-Habitat, 2006). According to Muhammad and Johar (2018), an efficient approval process that assists the stakeholders is essential. An approval process has to be streamlined and fast-tracked, as

unnecessary delays and excessive bureaucracy could affect project parties' commitment to the project (Osei-Kyei, Chan, and Ameyaw, 2017) .

2.6.8 Commitment and collaboration

Commitment between the different actors can be identified as one of the success factors for the implementation of the PPP (Kwak et al., 2009; Kwofie et al., 2016; Olusola Babatunde, Opawole, & Emmanuel Akinsiku, 2012). Given the long-term nature of the relationship in PPP, commitment from the different actors is vital, wherein the roles of both the private and the public sector are adjusted (Eaton & Akbiyikli, 2009). According to Bulet-Spring and Dewalf (2008), the degree of success of PPP hinges on the level of commitment for a specific period of time. For Bovarid (2004), PPP represents a “mutual commitment” between different partners in order to meet a specific goal.

Furthermore, according to Jacobson and Choi (2008, p. 648), commitment can be identified as a “logical result of monitoring and fine-tuning the unifying specific vision throughout the sometimes challenging processes of planning and construction”. Also, commitment can be identified as the desire and willingness to invest resources into a relationship on an on-going basis (Gounaris, 2005). In addition, long-term commitment can be defined as the willingness to achieve full and continuous integration between the actors involved to solve unexpected problems (Cheng, Li, & Love, 2000).

To achieve the benefits from PPP, long-term commitment to a win-win attitude is essential. According to Kavishe and An (2016) inadequate government commitment is a challenge that face the PPP housing schemes. Incentives, policies and agreement on the contract are all part of the government commitment (Koppenjan & Enserink, 2009). Moreover, according to Roberts and Chan (2016), an example of public sector commitment can be demonstrated through fast tracking of approval and permits. The public sector can demonstrate commitment to maximize PPP project success through government support and provision of the required permits, legal frameworks and access to finance. On the other hand, the private sector can show their commitment within the PPP project by maximizing efficiency to balance and ensure the benefits of the different parties (Almarri & Boussabaine, 2017b).

Within the context of PPP in affordable housing, there should be commitment to ensure the benefits for low- and middle-income people (Muhammad & Abubakar, 2019). According to Sengaputa (2006) the social commitment for low-income people must not be lost within the PPP housing arrangement. For example, in Nigeria, the lack of commitment and the political

will of the local authorities affect the number of housing units provided for low- and middle-income groups and influences the overall output of the PPP housing schemes (Ibem, 2010).

Furthermore, collaboration between different partners within the PPP housing schemes is essential. The development, finance, and operation of PPP in affordable housing require different stakeholders to establish collaboration across sectors such that they play different roles, but work together to achieve the desired goal (Davidson, 2016). According to Lonsdale (2007), true partnerships within PPP will not be considered when the actual collaboration between the partners is very low. However, within the collaboration, the outcome of the PPP will be met effectively and efficiently (Babatunde, Opawole, & Akinsiku, 2012). This will be reflected by appropriate definition of the PPP structure, roles and responsibilities in order to avert potential problems (H. Robinson, 2010).

Therefore, to ensure that the different partners within the PPP schemes work to achieve the desired goal as well as to ensure the benefits for the different partners in PPP, commitment and collaboration are two vital aspects for PPP success. It must also be noted that commitment between different stakeholders is associated with trust between them, which is also considered as a critical factor for the success of PPP.

2.6.9 Trust and openness

Trust within the PPP has been widely examined in the literature, as a trusting relationship between different actors is one of the key features of a successful PPP project (Cheng, Li, & Love, 2000; Jacobson & Choi, 2008; Dewulf & Bult-Spring, 2008). When there is no real trust within the relationship, the actors are likely to do as little as possible. However, when each party has a set of positive expectations of the other, the chance of unexpected interactions due to opportunism is very much lower (Klijn, Edelenbos, & Steijn, 2010).

Furthermore, the effective implementation of PPP requires the core element of trust: if this element is absent from the operational environment, the desired goal of the partnership will not be achieved (Brinkerhoff & Brinkerhoff, 2011). Trust can be defined as “The adoption of a belief by one party in a relationship that the other party will not act against his or her interests, where this belief is held without undue doubt or suspicion and in the absence of detailed information about the actions of that other party” (Tomkins, 2001, p. 165). Another definition of trust is not to expect that the other actor will act in an unprincipled manner, even if the opportunity exists (Edelenbos & Klijn, 2007).

The choice of an actor to take a risk is based on the belief that the other actor can be trusted (Klijn, Edelenbos & Steijn, 2010). Moreover, building trust between different actors is a time-consuming process and requires long-term commitment (Ansell & Gash, 2008). Within the international experience of the implementation of PPP in the affordable housing sector, trust is reflected as a strategic issue. For example, in PFI in social housing in the UK, trust issues can cause a delay in the initial stage of the project (Grubinc & Hodges, 2003). Therefore, the absence of trust between different stakeholders will affect their actions.

2.6.10 PPP process transparency and sharing information

Another factor that is associated with trust and affects the PPP network between stakeholders is the lack of information. According Biygautane et al. (2018) exchange of information between different stakeholders is vital for the success of the PPP with trust. This is one of the resources that different partners on the PPP housing schemes use to achieve the desired goal successfully (Mekawy, 2014). According to Susilawati and Armitage (2004), information has positive associations: without trust, the parties do not share information, and without further sharing of information, trust cannot increase.

Furthermore, a study by Grubnic and Hodge (2003) examining PFI in the social housing sector in the UK, found that sharing information affects the willingness to trust between different stakeholders and “could become a prerequisite for the approval of the scheme by central government and this would provide an opportunity to develop the ‘partnership’ element of PPPs” (p.183). Another study, conducted by Kavishe and An (2016), found that misinformation on the financial capacity of the private partner in PPP housing project is one of the factors challenging PPP housing projects. In addition, according to Hassan (2011) “sufficient information about incomes, inhabitants’ needs, is the key of offering the suitable and the adequate house and of preventing the wrong estimation of the real needs and demands” (p.428). Therefore, sharing information can be one of the significant challenges to PPP implementation in housing.

2.6.11 Constant communication

Communication between different partners involved in PPP has been identified as a critical factor that influences the success of the PPP. According to Zhang and Jia (2010), such communication leads to knowledge acquisition, knowledge transfer, and innovation. Comprehensive communication that is well-structured and planned, and that includes a strong

public consultation policy, will deliver and guide communication activities across the full range of project stakeholders. If the communication is successfully implemented, an effective working relationship between all stakeholders within the PPP will be gained (Moskalyk, 2011). On the other hand, miscommunication can lead to misunderstanding between PPP stakeholders, and as a result, the level of trust between different partners will be reduced and the operational productivity will be affected (McCann et al., 2013). In addition, according to Biygautane et al. (2018) absent of proper communication between government entities that are fragmented consider as a challenge that face the PPP success.

Furthermore, several studies emphasise the importance of communication within the implementation of PPP in the housing sector. According to Muhammad and Johar (2018), a more appreciation of each partner's interests, efficient decision-making, and successful PPP housing projects will be positively affected through regular communication between partners. Also, Abdul-Aziz and Kassim (2011) suggest that for the success of the PPP housing scheme in Malaysia, government should establish two-ways communication channels with project stakeholders and set up regular meetings to share updated information about PPP policies and potential projects. In addition, according to Kwak et al. (2009), early feedback from the private sector can be expected to lead to improved quality of policies and increase the possibility of success for a PPP project (Kwak et al., 2009). Therefore, maintaining accountable communication channels with different PPP stakeholders is vitally important for the success of the PPP housing project.

2.6.12 Sharing Decision-Making

Participation in decision-making between the various stakeholders in a PPP scheme is essential for the success of PPP (Kwak et al., 2009; Saqib, Farooqui, & Lodi, 2008; Yuan et al., 2012). PPPs should not be regarded as a true partnership, as the actual collaboration between the public and private partners in terms of joint action and decision-making is very low (Reynaers, 2014). Also, the structure of the decision-making influences the effectiveness of the PPP, especially where the decisions are made by a small group of political elites and other senior government officials (Biygautane, Hodge & Gerber, 2016).

Within PPP for affordable housing, participation by third sector organizations in decision-making can play a significant role to ensure that the private developer is to produce more low-income housing units (Muraya, 2006), because the interests of middle- and low-income groups will be harmed if the private sector are allowed to have too much of the role in decisions-making

to maximize their gains (UN-Habitat, 2006). For example, the private sector determines the prices of housing units, which affects the availability and affordability of low-income housing provided by the PPP Housing schemes in Ogun State (Ibem & Aduwa, 2012). Also, Ibem (2010) found that one of the factors that affect the PPP housing schemes in Nigeria is that too much control of the PPP housing schemes is in the hands of the commercial partner, which targets high-income people and harms the low-income interest.

Furthermore, the conflict in the investment of both public and private sector in decision-making hindered the implementation of PPP in affordable housing in Queensland: "Each party wants to minimise risk and maximise return on its investment" (Susilawati & Armitage, 2004. p. 6). Therefore, the balance between the protection of the interests of low and middle-income groups in PPP housing schemes and the importance of the private sector's and the third sector's role in decision-making is essential to achieve the desired outcome from PPP housing schemes.

2.6.13 Different Target between Partners

PPP is usually conceived as a cooperative agreement focusing on common goals based on sharing inputs and resources. However, the differences in goals between partners is considered as one of the critical challenges to the success of PPP in the delivery of affordable housing (Abdul-Aziz & Kassim, 2011; N. Kavishe & An, 2016). According to Moskalyk (2011), the goals of the private sector fundamentally oppose those of the public sector: the private sector focuses on economic gain, while the public sector strives to protect the community interest through regulation and minimization of risk. If these differing goals are left unmanaged, friction and mistrust between the partners of the PPP will occur.

Furthermore, private partners will only participate in PPP projects that can provide a reasonable rate of financial return, but for projects that have great social value but are not financially viable, the government may provide necessary support and/or guarantees to make them financially viable for the private sector (Kwak et al., 2009), especially for PPP projects that are implemented to deliver affordable housing where the financial profitability is limited and the goal of private entities is challenged. Therefore, balancing the goals of the public partner (affordability) and the private sector (profitability) within PPP housing projects is a challenge.

2.6.14 Appropriate risk allocation and risk sharing

Risk allocation plays a significant role in maximizing the success of the PPP. Risk allocation “refers to a primary measure of assignment between the projects’ direct participants, that is between the public and private sector, excluding the end-users” (Bing, Akintoye, Edwards & Hardcastle 2005. p. 307) . The fundamental conception of risk allocation is to allocate the risk based on the capability of the partners to manage that risk and absorb the consequences with minimum financial impacts (Almarri & Boussabaine, 2017). Furthermore, the ability to achieve value for money within the PPP project is dependent on the ability to identify and appropriately allocate risk between different partners (Zhang, 2005; Farquharson et al., 2011). In addition, Osei-Kyei, Chan, Javed, et al. (2017) found that “Effective risk management” among PPP stakeholders is the most critical factors that face the success of PPP projects.

Proper risk allocation through clear agreement and responsibilities will lead to the success of the PPP housing project (Abdul-Aziz & Kassim, 2011; N. Kavishe & An, 2016; Mekawy, 2014; Muhammad & Abubakar, 2019; Muhammad & Johar, 2018). However, in practice, risk tends to be allocated on the basis of commercial and negotiating strengths. The stronger party will allocate risk that it does not want to bear to the weaker party. According to Delmon (2011) , allocating too much risk to the project company results in an expensive and unstable project. On the other hand, allocating too little risk results in a loss of value for money. So, the value for money can be highest when the optimal risk transfer point is identified, as illustrated in Figure 2-6, below. Therefore, Zhang (2005) argues that PPP is not just an opportunity for the government to transfer all the risks to the private sector but requires appropriate allocation and management of risks.

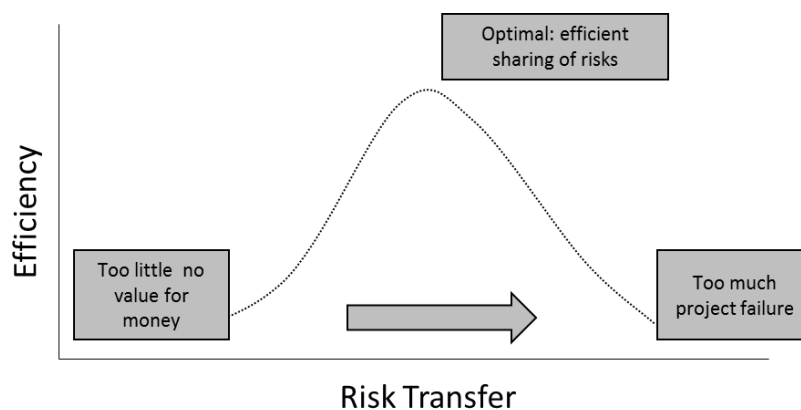


Figure 2-6 Risk Allocation (Delmon, 2011).

The risks involved in PPP housing projects, especially for the urban poor, include land availability, clear project formation, land litigation risks, identification and allocation of units to beneficiaries and other project management risks (Parashar, 2014). Furthermore, Singupote (2006) found that within PPP housing projects, financial risk is the highest, followed by delay risk, defect risk, cost overrun risk and sales risk. Also, Muhammad and Abubakar (2019) found that in Nigeria and as response of the financial risk private partner start to sell the land of project instead of building affordable housing. Therefore, in order to maximise the achievement and the success of the PPP housing project, it is important that government support (either directly or indirectly) is available, and that risks are properly allocated among all parties involved, and that each party involved is given sufficient incentives and guarantees.

2.6.15 The influence of the media and social support

The media and the public support for the PPP housing project is an essential factor for its success. Understanding and acceptance by the public and the community is vital to the progress and success of the PPP project and can be achieved through the media, NGOs and civil society (Osei-Kyei & Chan, 2017b). Furthermore, the impact of media coverage can be instant and can go beyond the main stakeholders of the PPP, especially when media interest in finding out about the performance of the PPP project can exert significant pressure, as it serves as a medium of community expectations and public perception management (Chung, Hensher, & Rose, 2010). The negative impact of media will result in negative public perception and reduction in demand for the PPP project and can further exacerbate the negative situation (Johnston & Gudergan, 2007). Thus, the government may need to be proactive in order to protect PPP project reputation through awareness and raising initiatives and consider the effect of the media on the success of the PPP housing project.

2.6.16 House buyers' demand

Another factor that challenges the implementation of PPP in the development of housing is demand uncertainty (Muhammada & Johar, 2018). The profitability of PPP projects is subject to large exogenous demand uncertainty, which is often not considered properly when designing the contracts (Black, 2014). This might also be a result of the house-buyers' choices and needs, and will affect the revenue stream for private partners in the PPP housing schemes (Engel, Fischer, & Galterovic, 2013; Ibem, 2010). Furthermore, this challenge could cause delays to loan repayments, and that will cause additional interest and debt to the private developers

(Abdul-Aziz & Kassim, 2011). Therefore, the end user or the house buyer's choice could be considered as a challenge faced by PPP Housing schemes.

2.6.17 Scale and replicability of PPP housing project

Delivering sufficient and more affordable housing for low- and middle-income households through PPP schemes is considered to be a significant challenge. According to UN-Habitat (2006), in the great majority of PPP schemes, the number of low-income households reached is disappointingly small. However, there have been PPP projects that have achieved their outcomes on a significant scale. In some partnerships, a reasonable level of replication has been achieved. Hence, within the context that PPP achieved a significant number of affordable housing the government play a significant role on that partnership by providing incentives and generate capitals as Malaysia experiment on PPP housing project (Aziz et al., 2007). On the other hand, the lack project funding and too much control of the PPP housing scheme by private sector lead to reduce the scale of the affordable housing through the PPP housing project as explained within Nigerian context (Ibem, 2011; Ibem & Adowa, 2012). In addition, according to Susilawati and Armitage (2004, p. 7) "PPPs may not be a suitable way to facilitate the increasing supply of affordable housing without major changes and a more comprehensive approach". Therefore, within the development of PPP, providing adequate housing on a significant scale is a challenge that needs to be considered.

2.6.18 Ample time frame

Within the increasing demand for affordable housing and the huge gap between the supply and demand for middle income people, PPP has been utilized as a mechanism for delivering affordable housing with adherence to time. Within the implementation of PPP projects, completion on or before time will offer investors the opportunity to recoup their investments costs earlier (Osei-Kyei, Chan, Javed, et al., 2017). However, time overrun for the implementation of PPP housing projects is a challenge facing the success of the PPP housing scheme (Kwofie et al., 2016).

Poor planning for the time framework for the implementation of the PPP housing project will lead to poor-quality implementation of the PPP housing products, cost and time overruns, and eventually termination of the PPP housing project. Abdul-Aziz and Kassim (2011) identified having "ample time to evaluate proposal" as a vital factor that impacts the implementation of PPP in housing projects. In addition, Muhammad and Abubakar (2019) found that hasty

implementation of PPP housing projects did not allow adequate time to establish the required infrastructure for the project: as a result, PPP housing projects were left without buyers due to the lack of the necessary infrastructure. Thus, an adequate planning for the time-frame for the implementation of the PPP housing project is a challenge.

The literature review has reported several enablers that contribute to the success of PPP in the delivery of affordable housing, which have been discussed in this section. These enablers can be listed as follows: government support, availability of financial market, effective bureaucracy, real estate developer capability, the existence of third sector organizations in the PPP housing scheme, cost and access among the poorest members of society, integration and coordination, commitment and collaboration, trust and openness, PPP process transparency sharing information, constant communication, shared decision-making among the partners, Appropriate risk allocation and risk allocation, the influence of the media and social support, house buyers' demand, scale and replicability, and ample time frame.

Up to this point, this chapter has explored definitions of PPP, PPP arrangements, PPP in affordable housing and its implementation internationally, as well as the various associated factors that challenge the successful delivery of affordable housing through PPP. The next section will discuss Interorganizational Relationships (IOR) as a perspective to provide the base for the different factors been identified within this section.

2.7 Interorganizational Relationships

The term 'Interorganizational Relationships' (IOR) can be utilized to describe relationships and help to categorise the various identified factors discussed in the previous section. IOR are the relatively enduring transaction flows and linkages that occur among or between one or more organizations in their environment (Oliver, 1990). Another definition of IOR "is concerned about relationships between and among organizations" (Cropper et al., 2008, p. 4). According to Bulet-Spring and Dewalf (2008, p.20), "If a co-operative relationship is formed to establish a specific project, the organizing can be characterized as an inter-organizational relationship." In addition, Wettenhall (2007) suggested that greater clarity is needed in the use of PPP to describe relationships between government and the private sector, while "This is drawn from the conventional expectation that governmental agencies should collaborate with other governmental agencies, non-profit organizations or even business organizations in order to provide better services and goods and to save resources" (Jacobson & Choi , 2008, p. 638). Hence, the underpinning theory of the enabling approach and PPP housing schemes is to create

a relationship with different housing actors from different organizations from both the public and the private sector to work on a co-operative environment basis.

Moreover, the previous literature examined the implementation of PPP at the project level, aiming to explore what factors influence its success. However, it is more important to explore how these factors are influencing the implementation of PPP, especially in environments where they did not originally exist. In addition, “how” questions are particularly important because they go beyond the project level of analysis, tapping into the wider organizational environment, which is described as a rich and powerful unit of analysis (Biygautane, Neesham, & Al-Yahya, 2019). Hence, the main research question of this study is the following: *How could PPP contribute to better development of affordable housing in Saudi Arabia?*

The main question of this research reflects the exploratory nature, which was indicated in Chapter 1. Furthermore, the aim of this research is to understand how PPP could contribute towards improving the delivery of affordable housing for middle-income households, and to develop a framework for utilising PPP arrangements in Saudi Arabia. According to Bulet-Spring and Dewulf (2008), the creation and functioning of IOR, together with the knowledge of the Actor, Network, and Project, form the functioning of the PPP, as illustrated in Figure 2-7, below.

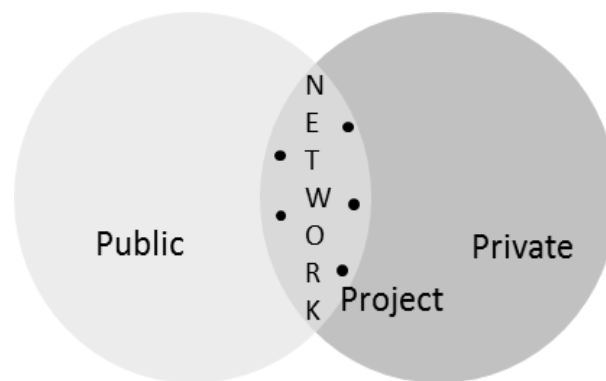


Figure 2-7 Project as an activated part of the public private network (Bult-Spiering & Dewulf, 2008)

1. **Actors:** different actors within the partnership have different interests, which determine their action. In order to have a successful partnership, it is important for actors to understand each other's goals and interests.
2. **Network:** the interlinking between public and private sectors is an important cause of network organisation, and not simply a network within a public organization. Furthermore,

networks are in fact structures or systems in which certain patterns of interaction are recognized.

3. **Projects:** Projects are temporary and aim to achieve clearly defined goals to solve a specific problem; when the project goals have been achieved, the project is finished.

Therefore, Actor, Network, and Project have been utilized to form the bases of the conceptual framework to investigate the implementation of the PPP for the delivery of affordable housing for middle income people in Saudi Arabia. The following section will discuss the conceptual framework.

2.8 Conceptual Framework

A conceptual framework is a structure which the researcher believes can best explain the natural progression of the studied phenomenon (Camp, 2001). According to Adom et al. (2016), a conceptual framework is an explanation of how the research problem would be explored by the researcher. Within the literature on the implementation of PPP in the housing sector, the existing conceptual frameworks are very limited. The literature review discussed and visited concepts that enabled the researcher to form a conceptual framework in order to achieve the aim of this research, which is to understand how PPP could contribute towards improving the delivery of affordable housing for middle-income households in Saudi Arabia. As suggested by the literature, knowledge of IORs' relationships with the Actor, Network, and Project can help to achieve an understanding of the functionalities of the PPP. Thus, Actor, Network, and Project will form the basis of the conceptual framework for this study. Moreover, the factors been identified in this chapter can be categorised based on the Actor, Network, and Project classification in order to help reach an understanding of how PPP could contribute to a better development for the delivery of affordable housing for middle income people in Saudi Arabia. The conceptual framework will direct the investigations to be made at the data collection stage. Each of these categories will be discussed in turn below.

Actor: the stakeholders of the PPP are expected to utilize their resources and work together with the public sector to achieve the desired goal of the partnership. However, within the literature review, several factors were identified as critical factors for the success of PPP in the housing sector that can be categorised and related to Actors. These include the following: enabling environment, favourable and efficient legal framework, government guarantees, existence of third-sector partners in the PPP housing scheme, capable real estate developers, availability of financial market, and the presence of adequate PPP skills and expertise.

Network: patterns of interaction within PPP between the different stakeholders are considered to be vital for the success of the PPP housing scheme. The factors that are identified and discussed in this chapter and related to the Network are the following: integration and coordination, PPP process transparency and sharing information, constant communication, commitment and collaboration, trust and openness, bureaucracy, media influence and social support, and shared decision-making among the partners. These different factors are recognized to be vital in how the relationships between different public and private sectors take place and affect behaviours and action on the implementation of the PPP housing scheme.

Project is the outcome of the PPP implementation. Within the literature review, several factors were identified as critical factor to the success of the PPP housing project. The factors that can be categorized under the ‘project’ element are the following: scale and replicability of PPP housing project, cost and access of the poor, risk sharing, house buyers’ demand, and ample time frame of the PPP housing project implementation.

Therefore, the conceptual framework adopted for this research to investigate the challenges facing the PPP in Saudi housing schemes is set out in Table 2-5, which shows the classification of the identified factors based on the three elements of Actors, Network, and Project.

Table 2-5 Conceptual Framework

	Actor							Network								Project					
	Legal Framework	Government Guarantees	Enabling Environment	Third sector	Capable Real estate developer	Expertise	Availability of financial market	Integration and coordination	Sharing Information	Communication	Commitment and collaboration	Trust	Different Target	Bureaucratic	Media Influence	Decision Making	Scale and replicability	Cost and access of the Poor	Risk sharing	Demand Uncertainty	Time Frame
UN-Habitat (2006)	*	*	*	*				*							*	*	*				
Abdul-Aziz and Kassim (2011)	*	*	*		*	*				*		*	*					*	*	*	
Aziz, Hani, & Musa (2007)	*	*	*													*					
Sengupta (2006)	*		*							*						*	*				
Muraya (2006)			*	*											*						
Ibem & Aduwa (2012)	*	*	*				*										*				
Ibam (2010)	*		*	*						*	*						*				
Mekawy (2014)	*		*	*		*	*								*		*	*			
Parashare (2014)	*		*													*	*	*	*		
Hassan (2011)	*		*	*			*		*								*				
Ibam (2011)	*		*	*											*		*				
Grubinc & Hodges (2003).									*		*										
Kwofie et al. (2016)	*	*	*		*		*			*	*	*						*			*
Kavishe and An (2016)	*		*		*	*	*		*												
Susilawati & Armitage (2004)	*	*	*					*		*	*	*			*	*					
Muhammada and Johar (2018).	*				*	*	*	*	*	*	*	*						*	*		
Yuan et al. (2012)	*	*		*		*	*			*								*			
Muhammad and Abubakar (2019)					*	*	*			*								*			*
(Johnston & Gudergan, 2007).														*				*			
(Osei-Kyei, Chan, Javed, et al., 2017)					*									*				*			*
Biygautane, Hodge and Gerber (2018)	*		*						*	*			*								

2.9 Summary

PPP has been utilized globally for different purposes and implemented in various sectors. There is no agreed definition of PPP. However, PPP in this study is identified as cooperation between government and private organizations, which sometimes involves voluntary organizations or knowledge institutions, in which all actors agree to work in order to achieve a common goal or deliver a specific task while jointly sharing the risk, resources, skills, and responsibilities. The international emergence of PPP in different sectors has been highlighted. This chapter has looked at the wide spectrum of PPP arrangements, as a number of PPP arrangements are used in the housing sector. The structure of the PPP arrangement, unlike traditional contracts, is complex, with a variety of different stakeholders. Internationally, PPP is becoming increasingly important to bridge the gap created by the increasing demand for services and infrastructure. PPP has emerged in the delivery of affordable housing as an enabling approach where the government works closely with housing market actors and enables them through comprehensive housing policies in order to eliminate the challenge of housing demand and supply. Furthermore, sources of funding, added value, increasing efficiency and innovation, earlier delivery and more effective housing policy were identified as motivations for the adoption of PPP in the housing sector. The implementation of PPP in the housing sector in several international contexts was also highlighted in this chapter. Within the differing economic and socio-political characteristics of the different international contexts, PPP have performed differently in the housing sector. The enabling factors that influence the implementation of PPP in the housing sector were discussed. Finally, this chapter concluded by explaining the conceptual framework, which was developed based on Interorganizational Relationships (IOR). IOR help to categorise the various identified enabling factors based on three main categories: Actor, Network, and Project. The conceptual framework discussed in this chapter will guide the investigations at the data collection stage within the context of Saudi Arabia.

CHAPTER III – Affordable Housing & Housing Development in Saudi Arabia

3 Affordable Housing & Housing Development in Saudi Arabia

3.1 Introduction

The previous chapter reviewed the concept, arrangement and structure of PPP and presented the rationale for PPP adoption within the delivery of affordable housing and the challenges to its implementation, which form the conceptual framework adopted for this study. This chapter will identify affordable housing, its measurement, and its delivery mechanism. It will also discuss housing development in Saudi Arabia, the various subsidy programs, and the challenges faced by the Saudi housing sector. The last section of this chapter will discuss the recent adoption of PPP as a method for the delivery of affordable housing in Saudi Arabia.

3.2 Affordable housing

The concept of affordable housing originated in the 19th century. The definition of housing affordability referred to the problem of slums, low-rent housing, shortage of housing or general housing need. Moreover, in many nations, "affordable housing" has become a common idea that summarises the issues of providing sufficient housing (Hulchanski, 1995). In addition, in housing policy, "affordable housing" has become a key term in both developed and developing countries (Dorokh & Torluccio, 2011). Accordingly, the affordable housing problem has attracted researchers and practitioners, including but not limited to construction, financing mechanisms, design and building techniques, urban planning, economy, social issues, and sustainability. However, whilst this research is intended to explore the delivery of affordable housing through PPP in Saudi Arabia, this section will provide an overview and understanding of affordable housing in international contexts.

The definitions of affordable housing and housing affordability are often used interchangeably: "in Britain and the United States, affordability is often expressed in terms of 'affordable housing'" (Stone, 2006, p. 153). However, affordability is not a characteristic of housing: rather, it is a relationship between people and housing. All housing is affordable for some people, no matter how expensive it is; for others, unless it is free, no housing is affordable. Moreover, the idea of affordable housing usually refers to housing that is affordable to specified eligible households whose income is not adequate for them to access appropriate housing within the market (UN-Habitat, 2011; Assaf, Bubshaitr & Al-Muwasheer, 2010).

Furthermore, different countries have different definitions of affordable housing, although the core concept is largely the same. For example, in the United Kingdom, affordable housing has been identified by the government as "social rented, affordable rented, and intermediate housing,

provided to eligible households whose needs are not met by the market" (National Planning Policy Framework, 2012). In Australia, affordable housing refers to housing for rent or purchase that is affordable to households whose financial capacity to obtain private housing is constrained (Milligan, 2009). Therefore, within different contexts, affordable housing refers to household incomes in relation to housing cost, and to those who are excluded from the housing market by market forces.

Even though there is no single definition of affordable housing, there is one common definition that is generally utilised and cited in a variety of academic literature. This is the definition provided by the United States Department of Housing and Urban Development (HUD), which is that affordable housing is housing that can be purchased by families using no more than 30 percent of their income (Chatfield, Melissa, & Warnock, 2000; Paris, 2007; Assaf, Bubshaitr, & Al-Muwasheer, 2010). Furthermore, for both governments and the private sector, housing affordability standards refer to the cost of housing or housing burden in relation to the household income (Newman & Holupka, 2014). Therefore, the most frequently used definition of affordable housing refers to the household's financial ability to meet its accommodation need.

Several studies argue that this definition of affordable housing needs to be extended further than simple economic or financial considerations, to include a wider range of factors that influence households (Yang & Shen, 2008; Ram & Needham, 2016). For example, a study by Mulliner and Maliene (2011) identified twenty factors that determine housing affordability, such as access to transportation, access to employment, energy efficiency of housing, and other factors related to social, economic, and environmental dimensions. However, it would be impossible to provide a single correct answer to the question of how much households of different incomes can "afford" to spend on housing, how spending or income should be measured or on the housing quality standard that should be set (Assaf, Bubshaitr, & Al-Muwasheer, 2010). Therefore, this implies a need for a broad and wide set of criteria by which housing affordability can be defined.

Within the Saudi Arabian context, there is no official definition of affordable housing. However, the Saudi Ministry of Housing mission statement states that its fundamental aim is "to facilitate housing for all community segments at reasonable price and quality". It also states that its goal is "to provide Saudi citizens with suitable housing that meets their needs through different programs and different options"(Ministry of Housing, 2017e). Therefore, for the purpose of this research, the definition of affordable housing set out by Bahammam (2004) will be used: affordable housing is housing that meets the need, increases the quality of life, and reduces the cost to the household, as illustrated in the following figure (Figure 3-1).

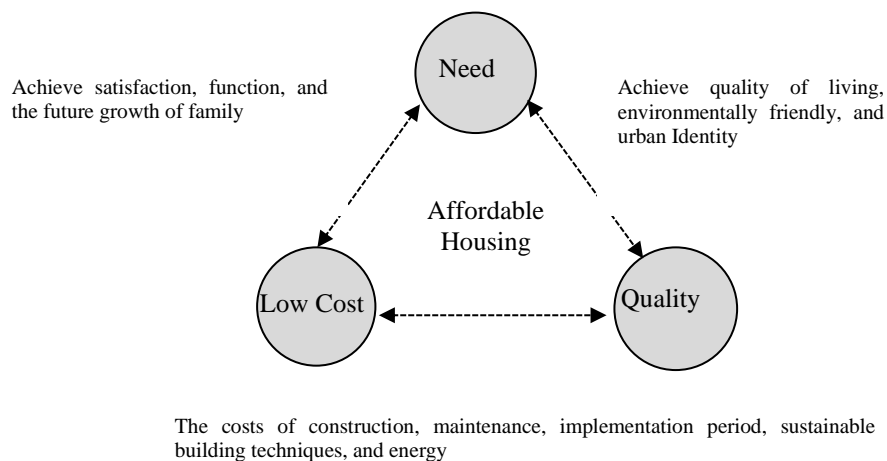


Figure 3-1 Three elements of the definition of affordable housing (Bahmmam, 2004)

3.2.1 Measuring Affordable Housing

There is no one universal measure to determine whether housing is affordable or unaffordable. However, there are two common measurement methods for housing affordability, known internationally as the Ratio approach and the Residual method (Stone, 2006; UN-Habitat, 2011; Ram, 2014). Hence, this research investigates how PPP could contribute to better delivery of affordable housing, and these measurements are used as follows to determine whether housing is affordable or unaffordable.

The ratio approach is the most well-known and the oldest indicator or measurement for housing affordability (Heylen & Haffner, 2013). It refers to the relationship between housing costs and household incomes. In addition, ratio measures answer the question of whether or not households are spending an unacceptably large proportion of their income on housing costs (Gabriel, Jacobs, Arthurson, Burke, & Yates, 2005). The household will not have enough left for other living expenses if it pays more than a certain percentage of its income on housing costs (Stone, 2006). Moreover, in comparative research, the ratio approach is widely used, along with the popular 30% benchmark, partly because of a lack of suitable alternatives (Heylen & Haffner, 2013).

The second most widely known approach for measuring affordable housing is the residual income approach, which measures the individual household's income capacity on the cost of housing after taking into account the other necessary expenditures of living (Stone, Burke & Ralston, 2011). In other words, the residual approach measures the individual household income after the housing payment has been made. Furthermore, because housing expenses usually make the biggest and least flexible claim on the household budget, it is rational to analyse income after the deduction of

rent or mortgage payments, with the remainder being the amount available for consumption (Freeman & Kiddle, 2000).

Several studies have argued that the measurement of housing affordability is complex. For example, Gan and Hill (2009) distinguish between three different affordability measurements, namely purchase affordability, repayment affordability, and income affordability. Another study, conducted by Esruq-Labin, Che-Ani, Tawil, Nawi, and Mydin (2014), identifies six components of housing affordability: "income ratios, loans and accommodations, facilities and services, safety and comfort, quality management, and grow home" (p. 226). However, according to Robinson, Scobie, and Hallinan (2006), no single measure can provide a complete picture of the housing affordability situation, although a number of measures in tandem can give a complete picture of housing affordability.

Alongside the different measurements used to evaluate whether housing is affordable or unaffordable, Majale, Tipple, and French (2011) describe capital variables and occupational variables as two variables of housing affordability. First, a household's ability to buy a house is determined by the following: land cost, building material, labour, profit, and infrastructure, and also its ability to finance that cost. Second, the occupation variable refers to the household's capability to occupy the house after the purchase, which consists of service cost, maintenance of the property, land lease and loan repayment, period of loan, interest rate, and non-housing expenditure. Figure 3-2 illustrates these components.

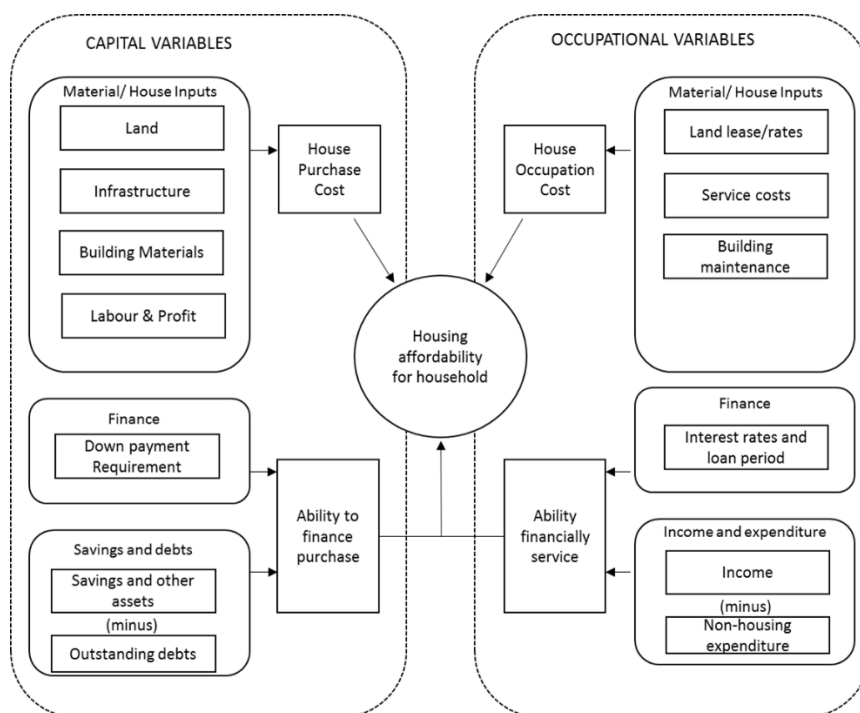


Figure 3-2 Affordable housing Components (Majale et al., 2011)

Another study, conducted by Brescia (2005) identified the following variables that determined the affordability of housing: price, housing quality, household income, household short-term and long-term income, factors that affect housing market demand and supply, government policies that affect the housing market, the household's capability to borrow and household preference. Therefore, affordable housing involves more than simplified conceptions of household price relative to household income and encompasses many complex dimensions. Similarly, there are many different types of affordable housing, which offer different solutions to meet the needs of different people in both developed and developing countries. The following section presents these different types of affordable housing delivery mechanism.

3.2.2 Affordable housing delivery mechanisms

Housing delivery can be categorized into two main types of delivery mechanism: conventional/formal and non-conventional/informal. Figure 3-3 illustrates the two housing supply mechanisms (Drakakis-Smith, 2012) as cited in (Shareem, Yusof, Roosli, & Abdullah, 2014). The following will identify these two main approaches to the delivery of affordable housing.

Informal housing refers to housing units built without proper building licenses or land use approval. In some places, informal housing is one mechanism used to deliver new housing to meet the needs of lower-income households (Wegmann & Mawhorter, 2017). Informal housing is not limited to shanty housing and slums: it can also include many other forms. For example, a separate freestanding structure placed behind a house and illegally linked to water and sewer lines, the subdivision of a single-household house into multiple units with separate entrances and the conversion of garages into flats are all examples of informal housing (Mukhija & Loukaitou-Sideris, 2014).

The main characteristics of informal housing are that it is in violation of building codes and/or land zoning regulations or land ownership laws, or evades related property taxes (Arnott, 2008). According to Marx (2006), the informal supply of housing is a reaction to the market's failure to meet the housing needs of people who cannot find housing through the market. In addition, when people's housing needs cannot be met within the formal framework by the government and the housing market, informality accrues as a solution and it becomes a mode of urban life (Zhu & Simarmata, 2015).

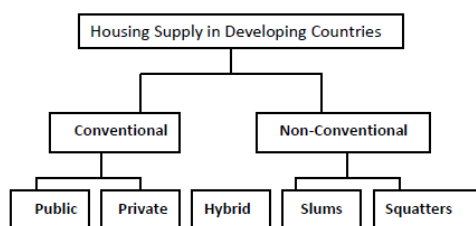


Figure 3-3 Housing Delivery Mechanisms (Drakakis-Smith, 2012)

The second type of housing delivery mechanism is formal housing, which is typically the opposite of informal housing. According to Arnott (2008), formal housing can be described as controlled housing activities imposed by the state through enacted laws and regulations to ensure sustainable development. Moreover, formal sector housing is planned beforehand, after which it is at least partially serviced before construction (Wells, 2007). However, formal housing is generally inaccessible and unaffordable to low-income and many middle-income households. In countries where finance is unavailable, down-payment requirements and interest rates are high and loan periods are short, the ability to secure formal housing finance is limited (UN-Habitat, 2011; Magina, 2016).

Furthermore, within the second categorization of the formal housing supply, there are different kinds of housing provision, which can be identified through the affordable housing continuum. The idea of an affordable housing continuum is generally accepted in the housing literature (Ram, 2015; Ram & Needham, 2016; Wake & Vu, 2007). The affordable housing continuum refers to the selection of housing options, from simple, emergency shelters and transitional housing through to supportive housing for vulnerable populations (the aging and /or disabled), and on to public and non-profit affordable rental housing, to market rental, all the way through to 'regular' home ownership, as illustrated in Figure 3-4.

The Affordable Housing Continuum							
Transitional Housing	Assisted Self-Help Housing	Social Housing	Other Institutional Practices	Affordable Rental Housing	Affordable Home Ownership	Affordable Rental Housing	Affordable Home Ownership
Government Subsidized Housing				Non-Market Housing/Cooperative Housing		Market Housing	

Figure 3-4 Affordable Housing Continuum (Ram, 2015; Ram & Needham, 2016; Wake & Vu, 2007)

The general classification of the continuum is based on whether the supply of affordable housing is through government subsidies or through the market. The difference between government housing and market housing is identified as follows: market housing can be defined as housing that is allocated on the basis of demand and supply in a process that is moderated by rules determined by the government. On the other hand, government housing is allocated according to need rather than to demand and supply, and is not allocated by market forces (Haffner & Press, 2009; Harriott & Matthews, 2009; Heath, 2014).

However, the formal affordable housing continuum is different from one country to another, depending on national and local conditions. "The difference in housing through countries reflects the legacy of the policies and responsibility of the institutional division on the provision of affordable housing" (Tsenkova, 2008, p. 12). Furthermore, each country has a form of housing which aims to meet the needs of low-income households that are unable to meet their needs through the market (UN-Habitat, 2008a). Therefore, globally, the continuum of affordable housing is different from one context to another.

For example, the Australian government identified the affordable housing continuum through the Affordable Housing Action Plan in 2007 as home ownership; private rental; community and not-for-profit housing; public housing; and supported accommodation, including emergency housing (Australian Capital Territory, 2007). In addition, Local Authorities, Housing Associations, owner occupation, and private rentals are four forms of affordable housing in the UK. Within owner occupation, the household owns their home with the assistance of loans: usually mortgages. In the other three forms, the household pays rent to the owner. Furthermore, within the UK, there are a number of housing associations which provide a range of housing forms. For example, sheltered housing provided by charities such as Abbeyfield and Almshouses are types of accommodation to meet the needs of elderly people, hostels provide shelter for homeless people, and co-operatives and co-ownerships refer to housing that is collectively owned and managed by the people who live in the same properties (Harriot & Matthews, 2009). Therefore, with the different national and local condition of different countries, the affordable housing delivery mechanisms that are provided by the government and the market are different. The following section will discuss the challenge of affordable housing.

3.2.3 The challenge of affordable housing

The failure of housing markets leaves millions of people living in inadequate housing, slums, and informal settlements, particularly in developing countries (UN-Habitat, 2011). In most developing

countries, affordable serviced land and formal housing remains inaccessible to most urban residents, especially low- and middle-income groups (UN-Habitat, 2008). Many people cannot currently access affordable housing through the market, because a market economy creates inequalities in the consumption of housing, including high prices, high cost of construction, legal charges and high profit margins, taxes, as well as insecure tenure (Ong & Lenard, 2002). In addition, long periods of inability of the market to meet housing needs lead to a general decline in the housing provision in many countries for economic reasons, which the private sector cannot tackle effectively; on the other hand, for political reasons, the public sector cannot ignore it (Stone, 2006). According Ernst and Young (2013), the factors of the affordable housing challenges can be recognized from both the demand and the supply side: from the demand side, factors include increasing demography and the social-economic nature; on the other hand, the supply factors are related to lack of access to housing finance, access to land, and inadequate housing policies. Figure 3-5, below, illustrates the challenge of affordable housing

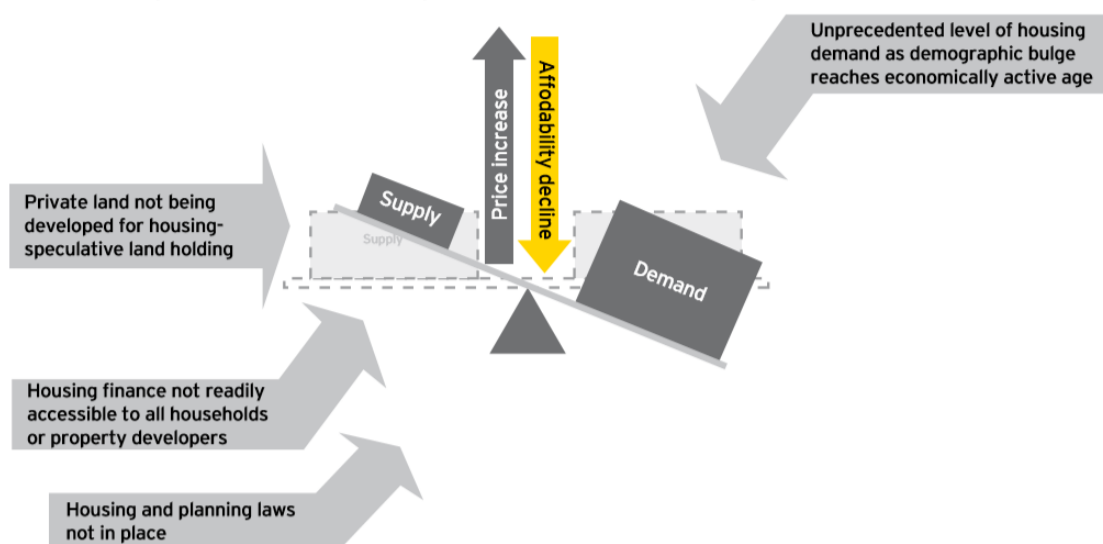


Figure 3-5 Affordable Housing Challenges (Ernst & Young, 2013)

Furthermore, the current reality makes it evident that neither governments nor markets can independently take responsibility for housing delivery challenges (Ibem, 2011). In the housing sector, the government’s role is gradually transferring from the provider to facilitator of PPP and a supporter of community-based initiatives: this is known as an enabling approach (UN-Habitat, 2011).

Therefore, housing is still a challenge faced by many segments of society, especially in developing countries, and governments have started to search for ways to solve these challenges through the

Enabling Approach. Hence, this research investigates PPP as a mechanism for the delivery of affordable housing within the Saudi Arabian context. The following section will discuss housing in Saudi Arabia and PPP as a new vehicle for affordable housing for low- and middle-income households.

3.3 Saudi Arabia

Saudi Arabia consists of thirteen regions with a total area of 2,250,000 square kilometres. The urbanization process in Saudi Arabia began with the commercial production of oil in the late 1940s (Hathloul & Edadan, 1991). A massive population increase, especially in urban areas, has been identified as one of the major effects of oil discovery as a result of migration from rural to urban areas in search of opportunities for employment and improved living standards, as well as an increase in the foreign workforce (Huang, 1985). Figure 3-6 illustrate Saudi Arabia regional map. Since the foundation of the Kingdom of Saudi Arabia in 1932, the Saudi government started the first subsidised housing program with the corporation of the Saudi Oil Company in order to develop urban settlements and build accommodation for Saudi employees (Tunclap and Al-Ibrahim, 1990). Later, in the 1970s, the government started the five-year development plans which have been used as the government's main instrument to steer the development of housing in Saudi Arabia (Alhajri et al., 2017). However, with the different subsidy programmes that have been implemented through the Saudi five-year development plans, housing remains a challenge for low and middle income people in Saudi Arabia. PPP for affordable housing has recently emerged as a potential solution to this, as a part of Saudi Vision 2030.



Figure 3-6 Saudi Arabia Regional Map

3.3.1 Population Growth

Population growth is one of the factors that lead to an increased demand for housing. Saudi Arabia has seen a rapid increase in population: from 2002 to 2008, its population growth rate was the highest in the world, registering a fivefold increase. This growth affected the population density equation, creating pressure on housing and many other services (Salam, Elsegaey, Khraif, & Al-Mutairi, 2014). Figure 3-7 illustrates the rapid population growth within the Saudi context from a historical perspective (General Authority for Statistics, 2017). One of the significant characteristics of the Saudi demographic is the young generations, which represent 58.5% of the total population in Saudi Arabia, as illustrated in the following figure (Figure 3-8). This leads to the formation of a large number of households, which will consequently create huge demand for housing (Bahammam, 2018).

In addition, Saudi Arabia has experienced rapid urbanization: the number of people in urban areas in Saudi Arabia has been growing at the rate of about 6% annually, compared with the average national population growth rate of 2.6% (Al-Shihri, 2016). According to Alzamil (2016), the urbanization rate in Saudi Arabia in 2016 reached 86%. Due to the rapid expansion of the population in urban areas and increasingly higher inflation rates of the economy, the Kingdom of Saudi Arabia is going through a vigorous economic transition, with particular emphasis being placed on housing (Taleb & Sharples, 2011). Table 3-1 shows an evaluation of the urban population in Saudi Arabia (Alzamil, 2016).

Furthermore, according to Bahmmam (2018), the current housing problem in Saudi Arabia is situated within the urban centers rather than in rural areas. 63% of the Saudi population live within 23 cities in the kingdom and 78 % of the total housing units rented are located within these cities, indicating the decline of the homeownership rate: “a huge percent of the tenants consider renting as a temporary situation until they own their housing units.” Furthermore, the residential real estate market is experiencing a shortage of affordable housing units, limited new housing development, and lack of access to housing finance, leading to growth in the rental market. Therefore, the rapid growth of the population and the high rate of urbanization lead to huge demand for housing.

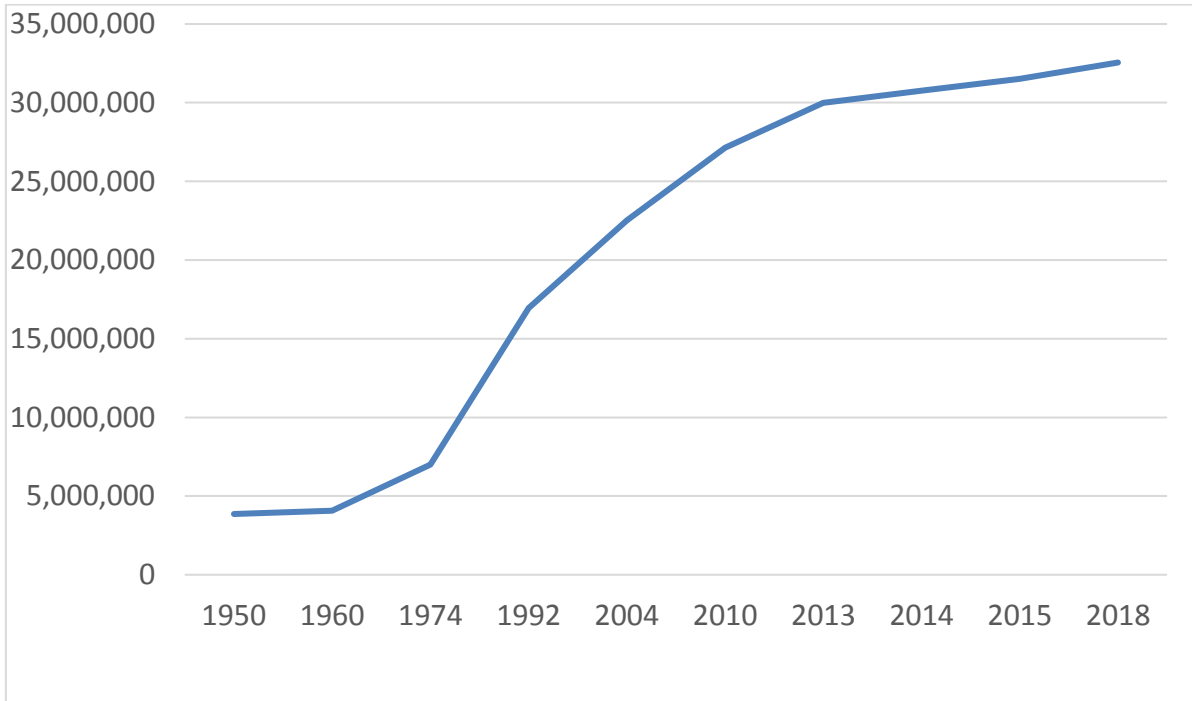


Figure 3-7 Saudi Population Growth (General Authority for Statistics, 2017)

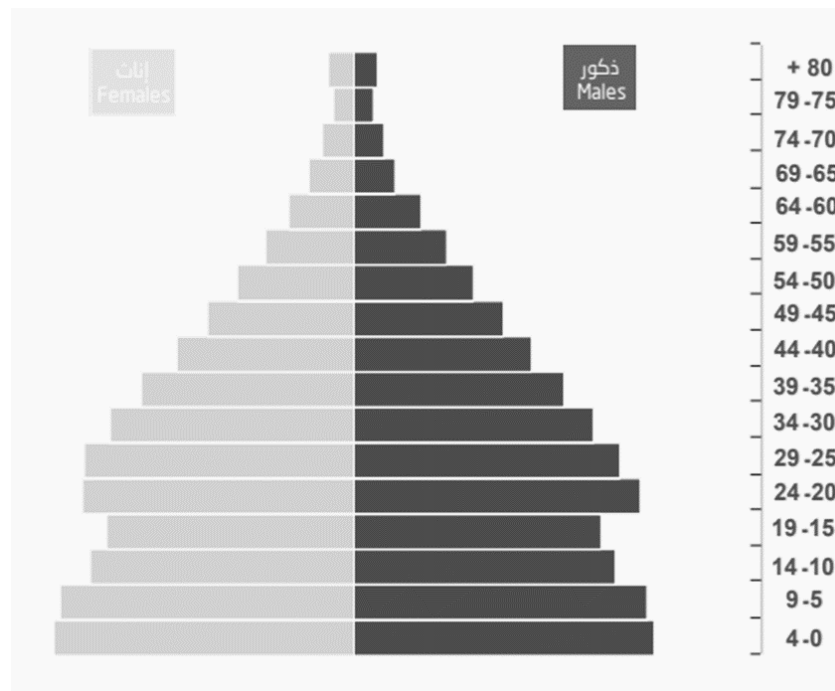


Figure 3-8 Saudi Population pyramids (General Authority for Statistics, 2017)

Table 3-1 Evaluation of the Urban Population in Saudi Arabia (Alzamil, 2016)

Year	Urban Population		Rural Population		Total	
	Population	%	Population	%	Population	Total
1950	-----	-----	-----	-----	3860000	100%
1960	1,222,419	30%	2,852,313	70%	4074732	100%
1974	3,925,301	56%	3,084,165	44%	7009466	100%
1980	6,338,886	66%	3,265,488	34%	9604374	100%
1992	12,541,801	74%	4,406,579	26%	16948380	100%
2000	16,910,947	85%	2,984,285	15%	19895232	100%
2010	23,066,430	85%	4,070,547	15%	27136977	100%
2015	27,108,419	86%	4,412,999	14%	31521418	100%
2020	30,362,096	87%	4,536,866	13%	34898962	100%
2025	33,097,667	88%	4,513,318	12%	37610985	100%
2030	-----	91.5%	-----	8.5%	-----	100%

3.3.2 Saudis Social Class

The aim of this research is to understand how PPP could work effectively in the delivery of affordable housing for middle income people in Saudi Arabia. According to Al Surf and Mostfa (2017), “housing in Saudi Arabia has been one of the main difficulties facing the average income Saudi citizen, not to mention low-income families as well” (p. 517). In addition, in Saudi Arabia, owning suitable housing is an obstacle for both low- and middle-income people (Alqahtany and Mohanna, 2019). A study carried out by Alnuaim (2013) estimated that the middle class, with an average monthly income from 3,900 to 38,200 SR, accounted for about 67% of the total Saudi population, and those with lower incomes of 3,800 SR or less per month accounted for 30% of the population, while higher income individuals earning 38,200 SR or more did not exceed 3%, as illustrated in the following figure 3-9 Saudi Social Classes.

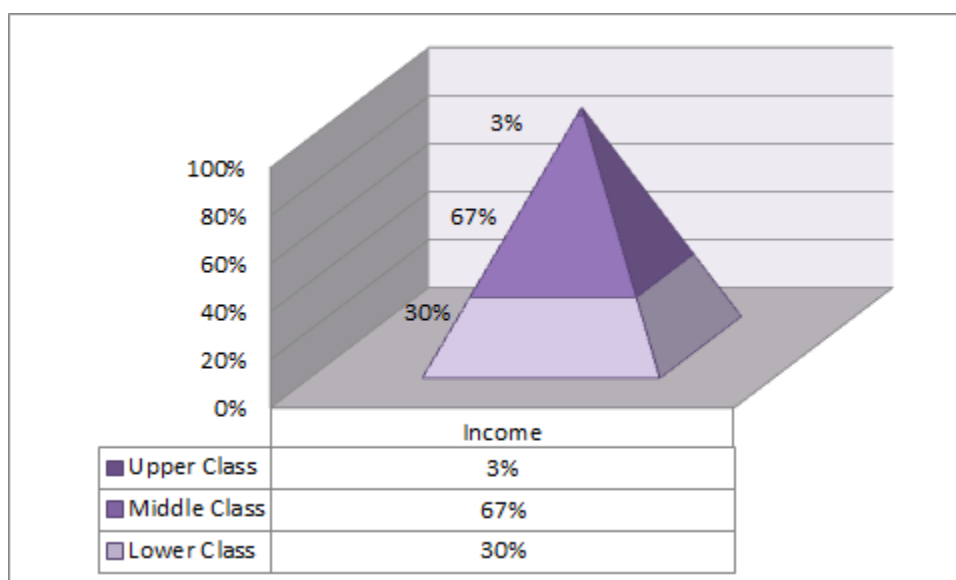


Figure 3-9 Saudi Social Class (Alnuaim, 2013)

Furthermore, the National Transformation Program 2020 emphasised that the implementation of PPP has emerged within the new Saudi Vision 2030 to deliver affordable housing for middle income people (NTP, 2016). Hence, this research will investigate the challenge of the new implementation of PPP as a mechanism for the delivery of affordable housing for middle-income groups, which form the majority of the Saudi population.

3.3.3 Saudi Housing Demand and Supply

In Saudi Arabia, neither the government nor the private sector can bridge the gap in housing. According to MOMRA, (2016) due to rapid urbanization, housing provision by both the private and the public sector cannot meet with rising housing needs, and this has also resulted in an increase in housing prices. Furthermore, the demand for affordable housing has greatly increased in the past decades for a number of reasons, including inflation and variation of income levels (Alhubashi, 2012). The gap between supply and demand within the Saudi context can be tracked through the Saudi five-year development plans, which is illustrated in Figure 3-10, which shows the gap between housing supply and demand in Saudi Arabia from the end of the first development plan in 1974 to the ninth development plan in 2015.

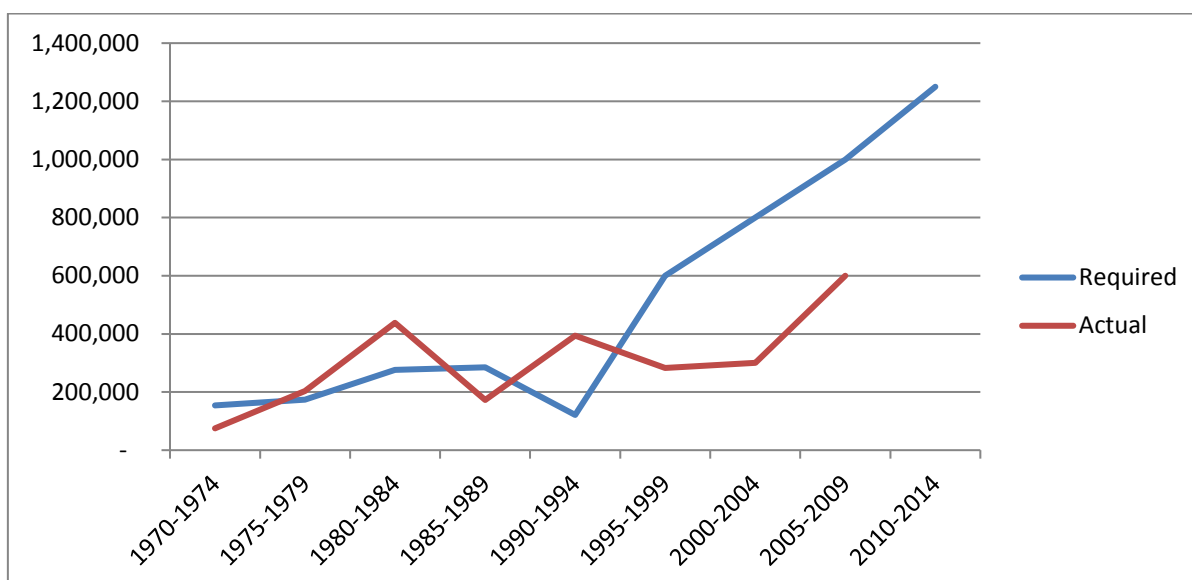


Figure 3-10 Gap between housing supply and demand in Saudi Arabia (Author, based on Saudi five-year development plan 1970-2014)

It is clear that at the end of the second development plan, the number of housing units built had met the target. This was also true of the third development plan. However, since 1990, the gap between supply and demand within the housing sector has been increasing consistently and rapidly. According to Aleid (2017), there was a shortage in housing supply in the 1990s for two reasons: the first was falling oil prices in the mid-1980, which resulted in significant cutbacks in Saudi Arabia's financial surplus, and the second was the economic consequences of the Gulf War. Moreover, for the tenth development plan, the Ministry of Housing announced that the total housing need would be 1.25 million housing units, but the target is to achieve 85.6% of the total demand by 2020 (Ministry of Housing, 2017d).

Therefore, it is evident that housing within the Saudi Arabian context is a major problem and the gap between supply and demand is significant. The following section will give an overview of the history and development of the housing sector in Saudi Arabia, the role of the stakeholders responsible for the provision of housing within the Saudi public sector, and the Saudi housing challenge. Additionally, the newly adopted role of the government to deliver affordable housing within PPP will be discussed.

3.3.4 Saudi Housing Sector Development

The Saudi government's intervention in the housing sector has gone through various stages and formed different government policies. Various government ministries and agencies, several of which have been cancelled or replaced by other agencies, have applied these policies. Figure 3-11 illustrates the key events that have influenced housing development in Saudi Arabia, as presented in the literature and published in government reports before and within the five-year development plan until the present. **Appendix I** reviews the housing development policies and programmes in Saudi Arabia.

According to Al-Mayouf & Al-Khayyal (2011), the government's dissolution of the Ministry of Public Work and Housing, and its subsequent handover of responsibilities to the Housing Authority in 2008 (which became the Ministry of Housing 2011), which came about as "a whole reform process for housing sector", means that the responsibility for the housing sectors and the task of housing provision in Saudi Arabia were transferred through several authorities. It should also be noted that it has been less than a decade since Saudi Arabia established a Ministry of Housing, which explains the gap in the provision of housing (as shown in Figure 3-10), and the need for a new vision and strategy: hence Vision 2030.

In 2016, the Saudi Government launched Saudi Vision 2030 to be used as a roadmap for the country's economic growth. Saudi Vision 2030 attempts to establish the kingdom's general strategies, policies, goals, and objectives. In order to align with the requirements of the vision, some ministries, institutions and government entities underwent a restructuring process to enhance the level and quality of services provided to beneficiaries, and to achieve a prosperous and sustainable future (Kingdom of Saudi Arabia's Vision 2030, 2016). The government of Saudi Arabia will seek to increase the contribution of the private sector by encouraging local and international investment in aspects such as health care, municipal services, finance, and housing. In addition, according to the Saudi National Transformation program 2020 (2016), the delivery of housing units will be achieved through PPP. However, given that Vision 2030 was only put into place in 2016, there is a need for a deeper understanding of the challenges that face the provision of low and middle-income housing, and the process that enables this (which is the subject of this study).

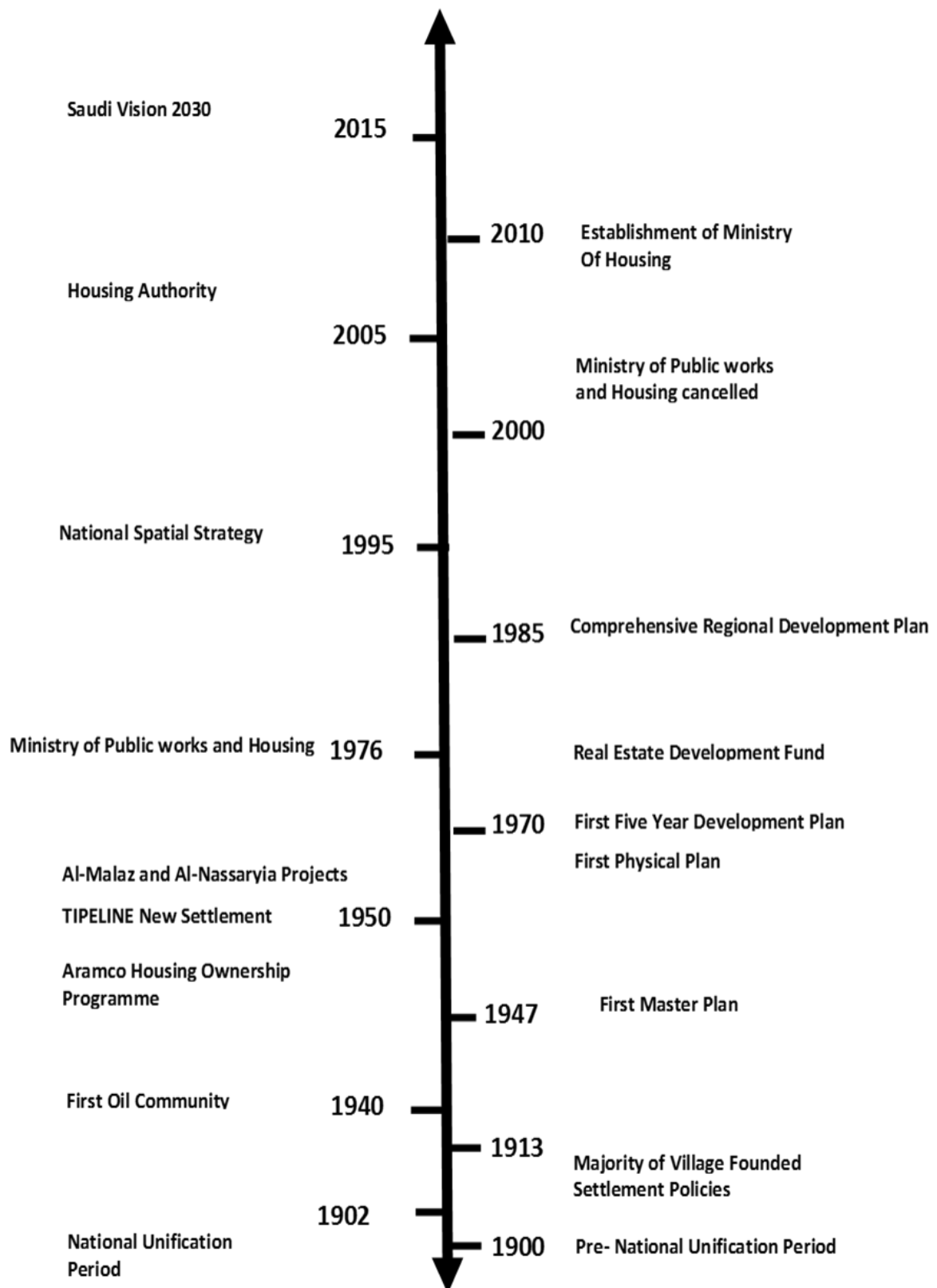


Figure 3-11 The key events that have influenced housing development in Saudi Arabia (Author)

3.4 The Saudi Housing Delivery Mechanism

The government has implemented several housing programmes and policies to ensure housing delivery since the kingdom of Saudi Arabia was founded in 1932. Government housing policy's main goal is to provide suitable and affordable housing (Al-Otaibi, 2006). In addition, in order to provide citizens in low- and middle-income groups with houses, the government has established real estate development funds, ministries' public housing programmes, land grant programmes, charity foundations, and Ministry of Housing programmes. This section discusses the different programmes available in Saudi Arabia, which support the provision of low- and middle-income housing.

3.4.1 Real Estate Development Fund

On major factor which helps to meet the need for housing is the availability of housing loans and access to finance for people with low and medium incomes. "Housing finance is a vital component of a well-functioning housing system" (Warnock & Warnock, 2008, p.240). At the end of the first development plan in 1974, the Saudi government established the Real Estate Development Fund (REDF) to contribute to the development of modern housing and housing complexes in different parts of the country. Between 1974 and 2014, the REDF helped to build 1,026,083 housing units in different parts of the country, by providing total loans of 269,852,662,615 SR (REDF, 2014). The highest number of housing units was funded in Riyadh, followed by the Eastern Province and Makka Region. Figure 3-12 shows the number of housing units funded by the REDF from 1974 to 2014.

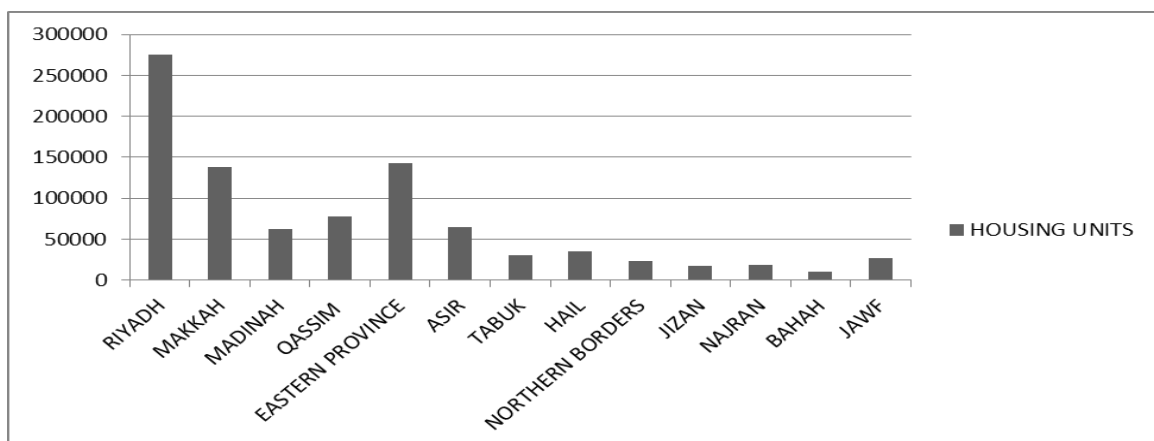


Figure 3-12 Number of houses funded by REDF from 1976 to 2014 (REDF, 2014)

The REDF become the main source of funding for housing in Saudi Arabia, and is considered as the backbone of the country’s housing and real estate financial allocation. However, there has been a rapid increase in the number of applicants, and consequently, the waiting list has now reached more than 15 years, with 503,431 candidates on this list (Ministry of Housing, 2017d). The region with the largest number of candidates on the waiting list is Riyadh, followed by Makkah, and the Eastern region. Figure 3-13, below, illustrates the distribution of the waiting list candidates in comparison to the Saudi population within the different regions of Saudi Arabia, which can indicate the significance of the housing finance problem across the country.

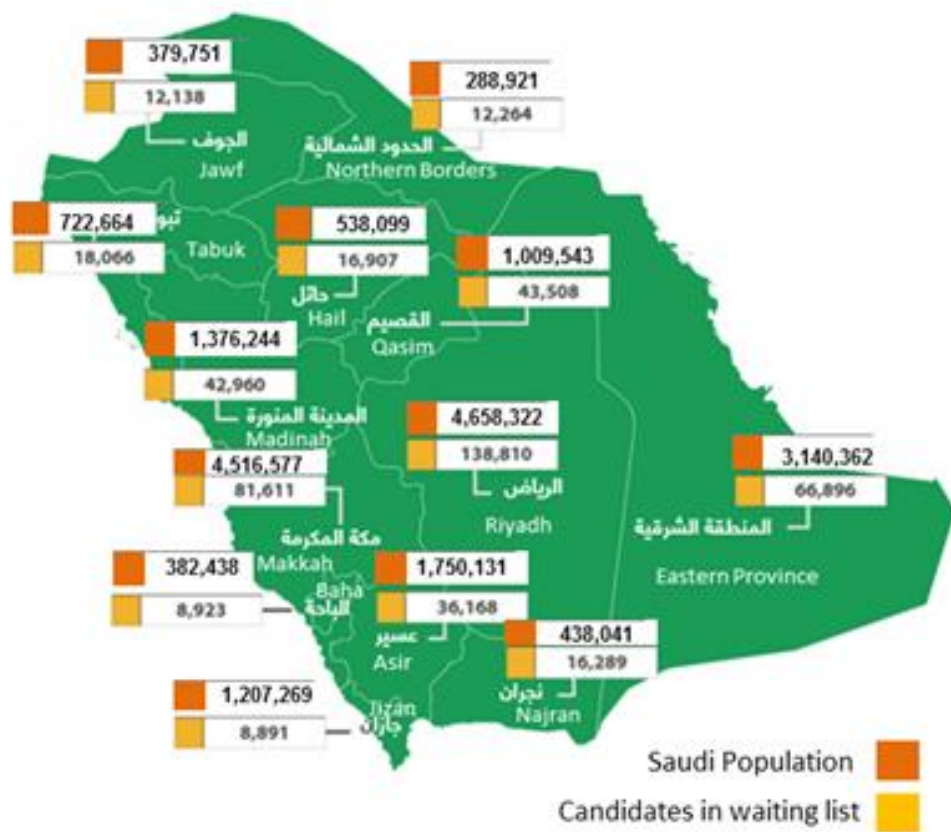


Figure 3-13 Loan waiting list in comparison to Saudi population (Ministry of Housing, 2017; General Authority for Statistics, 2017).

One of the major problems with the REDF is that this program is heavily dependent on government expenditure. According to UN-Habitat (2011), there has been a significant reduction in the number of loans available since the fluctuation in the value of oil exports and events such as the first Gulf War. Furthermore, despite the huge amount of government investment through REDF, Saudi housing demand has not yet been fully met. The shortage of affordable housing in Saudi Arabia is

clearly shown by the long waiting list for free loans from the REDF which can take up to fifteen years or more to grant (High Commission for the Development of Arriyadh, 2012).

However, long waiting lists are not the only issue: REDF loans are also deemed insufficient to enable the borrower to buy a home. The cost of dwellings and houses has increased over recent years. For example, between 2002 and 2006, house prices increased by 13.7 per cent annually, or a total of 68.5 per cent over four years (Aleid, 2017). Furthermore, the majority of housing projects provided by the private sector have targeted those who have an income of over 12,000 SR per month, but no more than 20% of households meet this threshold (Alhubashi, 2012).

The contribution of the commercial banks in providing access to finance for loans is another difficulty that contributes to the problem of housing in Saudi Arabia. A study by Meeran and Sidawi (2010) revealed that because some banks in the KSA have only recently started their mortgage schemes (in 2009), they therefore have limited financial experience and a lack of awareness of market needs and how best to respond to those needs. Whereas other banks offer only one type of mortgage loan with a maximum repayment period of 11-20 years only, the REDF, by contrast, provides long-term interest-free loans of up to 25 years. Therefore, there is a need for alternative solutions to assist with the provision of funding houses for middle and low-income groups in order to ensure affordability and meet the national housing demand in Saudi Arabia.

3.4.2 Ministries and Public Government Housing

Ministries and public institutions and agencies have developed their own local housing communities and provided their employees with housing units. The different housing units are built based on family size and employee ranking, and are provided to the staff either free or for an annual fee (Al-Mayouf & Al-Khayyal, 2011). During the Fifth Development Plan, 1995-2000, government agencies built more than 221,600 housing units for their staff (Bahammam, 2002). However, in 2017, this type of housing did not exceed 2% of the existing total housing (General Authority for Statistics, 2017). Such initiatives can assist with the national demand for housing in Saudi Arabia. However, there is a need for more of these initiatives.

3.4.3 Land grants

Since 1954, the Ministry of Municipalities and Rural Affairs has taken the responsibility for developing land, and authorised local authorities in urban areas to grant free land to Saudi citizens. This policy granted a free residential land plot for every eligible citizen in the applicants' area of residence in a planned neighbourhood, whether a city or town (Al-Mayouf & Al-Khayyal, 2011).

This programme made a valuable (but partial) contribution to the housing development in the country, but did not fully support the needs of low-income groups.

3.4.4 Ministry of Housing programmes

In 2010, the government established the Ministry of Housing to enhance and develop the housing sector, and to meet the challenge of the rapid increase in the need for housing. Recently, the Ministry of Housing started the Ownership Forms scheme, which is a comprehensive programme to study beneficiaries' housing needs in order to provide them with suitable housing based on their social and financial situation. This requires the following four-stage procedure: first, to study the social level of the beneficiary; second, to study the applicant's income and what proportion they could afford in terms of housing unit cost; third, to determine what kind of housing is suitable for the candidate; and fourth, to determine which specific housing product is most suitable for them.

There are 750,000 candidates who are eligible for this programme. Beneficiaries will get support ranging from 10% to 100% of the housing product, based on their social and economic situation (Ministry of Housing, 2017d). Ministry of Housing projects are located in all thirteen regions of the Kingdom. Currently, there are 69 housing projects in different parts of the country. When these projects are completed, they will provide 14,480 villas, 27,350 land lots, and 31,877 apartments in 67 different cities and towns around the Kingdom. The beneficiaries will get one of three housing products: housing units, land grants, or a residential loan with the cooperation of the REDF (Saudi Vision 2030, 2017). Although this initiative is in its embryonic stage, it can resolve some of the housing problems. However, there is no evidence reported by the literature to show a significant contribution of this programme, and the time frame for the provision of the housing units is not clear.

3.4.5 Charity Foundations

There are 51 charity foundations and associations working under the Ministry of Social Affairs, providing 13,424 housing units for low-income people, like the King Abdullah Bin Abdullaziz Parents' Housing Associations, Prince Sultan Charity Foundation, and King Salman Housing Associations (Bahammam & Shalabi, 2016). Other charities provide housing for low-income people through endowment properties: for example, the King Faisal Charity Foundation and others pay the rent of people in need. These foundations receive funding from the government, charitable donations, endowments, project investment returns, and profits from housing rental and sales (Sidawi, 2009). However, these foundations are not fully reliable and very much depend on the

good will of the sponsors, without a long-term strategy to fulfil the housing demands of low-income groups.

It would therefore be fair to conclude that despite the number of initiatives described in this section, the need for low-income and middle-income housing in Saudi Arabia is apparent, which justifies the utilisation of PPP arrangements in order to fulfil housing demands. However, it is important to explain the housing challenges in Saudi Arabia, which are complex and associated with several factors which will be discuss in the following section

3.5 Challenges of the Saudi Housing Sector

The striking gap between levels of housing supply and demand, as well as the long waiting list for REDF across the country, demonstrates the challenge of providing affordable housing in Saudi Arabia. The literature has represented several factors that contribute to the challenge of affordable housing in Saudi Arabia, and these factors can be identified from both the supply and the demand side of housing. Within the demand side, the factors that contribute to housing demand are population and demography, income and availability of mortgages, and people’s taste and lifestyle. On the other hand, the factors that affect the supply side are land, capital, labour, entrepreneurialism, zoning and planning regulations. The following table (Table 3-2, Table 3-3) tracks the challenge of affordable housing in Saudi Arabia from 1990-2019.

Table 3-2 Saudi Housing Challenge (Author)

Serial No	Authors	Year	Saudi Housing Challenge
1	Tuncalp & Al-Ibrahim	1990	<ul style="list-style-type: none"> • Population growth, • Increasing foreign labour force, • Rapid urbanization, • Increase in the number of households • Traditional preference for villa-style homes • High construction cost • Undeveloped financial market
2	Salam & Alshuwaikhat	2006	<ul style="list-style-type: none"> • Lack of investment in the housing sector • Decrease in the housing budget.
3	Al-Otaibi	2006	<ul style="list-style-type: none"> • Ability to afford the chosen housing type within the housing market
4	Sidawi	2009	<ul style="list-style-type: none"> • Present financing system is not capable of meeting the present and future demand of low-income homebuyers.
5	Assaf, Bubshaitr, & Al-Muwasheer,	2010	<ul style="list-style-type: none"> • Labour availability • Material standards • Design quality • Design changes

Table 3-3 Saudi Housing Challenge (Continued)

Serial No	Authors	Year	Saudi Housing Challenge
6	Opoku and Abdul-Muhmin	2010	<ul style="list-style-type: none"> • The supply of housing is not affordable for low income households
7	Meeran & Sidawi	2011	<ul style="list-style-type: none"> • Banks have a number of legal and financial constraints for housing loans
8	Al-Mayouf & Al-Khayyal	2011	<ul style="list-style-type: none"> • Population growth rates • The absence of a comprehensive strategy for housing provision • Real estate finance mechanisms
9	Alhubashi	2012	<ul style="list-style-type: none"> • Rise in land prices • Funding difficulties. • Legislative framework in the housing sector
10	Abdul Salam, Elsegaey, Khraif, Al-Mutairi,	2014	<ul style="list-style-type: none"> • Inequitable distribution of the population across regions, influencing house ownership • Lack of supply of affordable housing • Increasing prices
11	Alzamil	2016	<ul style="list-style-type: none"> • Population growth • Rapid urbanization, • High land value, • Construction costs, inflation, • Real estate speculation
12	Bahammam	2018	<ul style="list-style-type: none"> • Traditional housing mechanism where the government work as a direct provider and not within the market actor
13	Alqahtany and Mohanna (2019)	2019	<ul style="list-style-type: none"> • High house cost • Low purchasing power • Financing difficulties • Legislation issues

The above factors represent challenges to affordable housing in Saudi Arabia, and the government is looking to solve the housing challenge through the enabling approach using PPP as a mechanism for the delivery of affordable housing, which is the focus of this research. The following section will discuss the current PPP project in Saudi Arabia.

3.6 PPP in Saudi Arabia

In Saudi Arabia, the concept of partnerships with the private sector originated in official Saudi government documents from the late 1970s, but no regulations or policies were developed until 2002, whereupon a comprehensive framework to regulate the involvement of the private sector in the provision of water and electricity was implemented. Furthermore, a study by Biygautane (2017) shows that there were seven major PPP projects in Saudi Arabia. Two of them were to build airports and other projects were in power and water plants. Therefore, in Saudi Arabia, apart from the two pilgrim airports and several independent water and power plants, PPP has not been used in other high-profile projects (Biygautane, 2017). Table 3-4 shows the PPP projects in Saudi Arabia.

Table 3-4 PPP projects in Saudi Arabia (Biygautane, 2017)

Project Name	Sector	Contract duration	Types of PPP	Project Capacity
Shuaibah IWPP	Power/water	20 years	BOO	Project commercial operation in 2009 (900 MW, 880,000 M3/day)
Shuqaiq 2 IWPP	Power/water	20 years	BOO	Project commercial operation in 2011 (850 MW, 212,000 M3/day)
Marafiq/Jubail IWPP	Power/water	20 years	BOOT	Commissioned in 2010 (2734 MW, 800,000 M3/day)
Qurayyah IPP	Power	20 years	BOO	Project commercial operation in 2014 (3,927 MW)
Rabigh IPP 1	Power	20 years	BOO	Operational since 2013 (1,204 MW)
Hajj terminal at KAIA	Transportation	20 years	BTO	Extension of Hajj terminal finished in 2009, operation
Prince Mohammad bin Abdulaziz International Airport in Medinah	Transportation	25 years	BTO	Airport's new terminal opened in 2015, operation ongoing

Interest in PPPs has been reinvigorated since April 2016, when the Cabinet approved the Strategic Saudi Vision 2030. According to Butcher and Haque (2016), the National Transformation Program 2020 aimed to adopt PPP in many sectors as follows: in the health sector, private sector engagement will provide 35% of the total budget for health care. In addition, in the education sector, private sector participation would finance the construction of public schools. In the transportation sector, there will be private sector contributions to developing and operating roads (5%), railways (50%) and ports (70%); and in the housing sector, the private sector will be involved in the development of government land, and large-scale affordable housing projects. However, what is not yet clear is the shape of the arrangement that new PPP will adopt in these

different sectors. Therefore, the use of PPP arrangements has recently expanded amongst different sectors in Saudi Arabia, including the housing sector. The following section will discuss Saudi Vision 2030 and its implementation program – the Saudi National Transformation Program 2020 –within the housing sector.

3.7 Saudi Vision 2030 and Housing Sector

The new Saudi Vision 2030 is “a wide-ranging privatization and economic reform program that aims to reposition the Kingdom's economy away from its dependence on oil export revenues and Government spending. It encompasses strategic objectives, targets, outcome-oriented indicators and commitments that are to be achieved by the public, private and non-profit sectors in the Kingdom” (Al Surf & Mostafa, 2017, p. 515).

Furthermore, some of the objectives cited within the new Saudi Vision 2030 are to reduce the dependence on oil revenue and increase the participation of the private sector in providing public services. Moreover, within the housing sector, Saudi Vision 2030 states that:

*Even though 47 percent of Saudi families already own their homes, we aim to increase this rate by five percentage points by 2020...We will meet this target by introducing a number of laws and regulations; **encouraging the private sector** to build houses; and providing funding, mortgage solutions and ownership schemes that meet the needs of our citizens.* (Saudi Vision 2030, p.28)

Furthermore, within the new Saudi Vision 2030, the Ministry of Housing established and developed a number of enabling programmes that help to facilitate PPPs and to organise, plan and monitor the housing sector to provide households from different levels of society with housing units at a reasonable quality and price (Saudi Vision 2030, 2017). Furthermore, the Ministry of Housing announced that the goals of implementing PPP in the housing sector are as follows:

- To encourage investment in the housing sector;
- To enable citizens to obtain housing;
- To establish an attractive investment environment for both local and international investors;
- To increase home ownership from 47% to reach 52% in 2020;
- To increase the efficiency of private developers and increase the diversity of housing products;
- To encourage the private sector to participate in the housing sector;
- To increase creativity and modern building technology;

- To have a positive impact on the housing sector in the economic development.

The Ministry of Housing (2017) also announced the benefits expected from the utilization of the PPP as a mechanism for the delivery of affordable housing. These benefits are classified into three categories: for beneficiaries, private developers, and the Ministry of Housing. The benefits expected for the Ministry of Housing are to gain the expertise of the private sector, to increase the housing supply and improve the housing market, to relieve the government financial burden, and to be able to use private land. The expected benefits for the private sector are to provide a database of the beneficiaries of the PPP housing project, reduce the cost of the housing project, reduce the risk of investment, and gain incentives from the Ministry of Housing. For the beneficiaries, the expected benefits from PPP as a mechanism for housing delivery are an increased supply of housing products and better quality of housing, easier access to housing finance, and shorter waiting lists to get housing products. Figure 3-14 illustrates the benefits expected from the utilization of PPP in the Saudi Housing Sector.

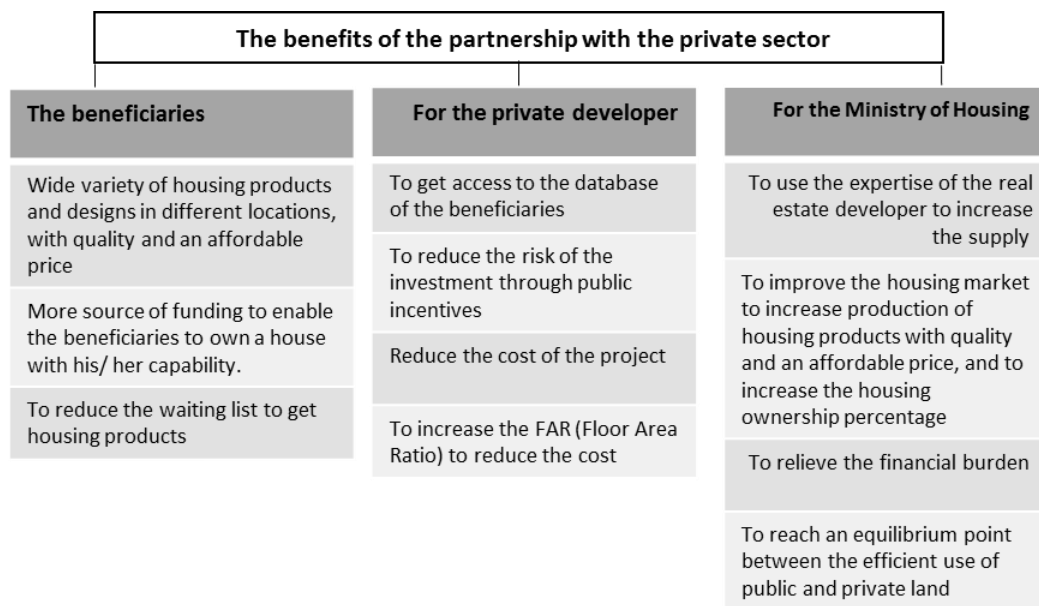


Figure 3-14 Benefits expected from the implementation PPP in Saudi Housing Sector (Ministry of Housing, 2017f)

Furthermore, the National Transformation Program 2020 (NTP, 2020), which aims to build the institutional capacity to achieve the Saudi Vision 2030, has outlined the targets that need to be achieved by different government agencies. Within the Ministry of Housing, three different objectives need to be achieved: firstly, improving the performance of the real estate sector and increasing its contribution to GDP; secondly, stimulating real estate supply and raising productivity to provide residential products with appropriate price and quality; and thirdly, enabling citizens to obtain suitable housing financing (NTP 2020, P58), as explained in Table 3-

5, below. This indicates that within the different housing objectives, the government has set performance indicators which reflect the current situation of housing and compare it with regional and international benchmarks. Furthermore, it also indicates several aspects of the current challenge within the housing sector, which need to be considered. For example, the waiting period for obtaining a housing loan can be as long as fifteen years, while the cost of housing equals ten times the average individual annual income, highlighting the housing affordability issues within the Saudi context (NTP, 2020).

Table 3-5 NTP housing sector objectives and the KPI (NTP 2020, 2016, P58)

Strategic Objective (1)		Improve performance of the real estate sector and increase its contribution to the GDP				
Relevant Vision 2030 Objectives		Enable citizens to obtain a suitable residence Create an attractive environment for both local and international investors and enhance their confidence in our economy				
Key Performance Indicators	Baseline	2020 Target	Unit	Regional Benchmark	International Benchmark	
Percentage of real estate sector contribution to the GDP	5	10	Percentage (%)	13	20	
Annual growth rate in the real estate sector	4	7	Percentage (%)	6	11	
Average time required to approve and license new residential real estate development projects	730	60	Day / Permit	44	26	
Strategic Objective (2)		Stimulating the real estate supply and raising productivity to provide residential products with appropriate price and quality				
Relevant Vision 2030 Objectives		Enable citizens to obtain a suitable residence Create an attractive environment for both local and international investors and enhance their confidence in our economy				
Key Performance Indicators	Baseline	2020 Target	Unit	Regional Benchmark	International Benchmark	
Housing unit cost multiples of gross individual annual income	10	5	Multiple	6.7	3	
Percentage of residential units developed by approved real estate developers	10	30	Percentage (%)	Not Applicable		
Percentage of available housing units (new and unoccupied) to total number of subsidy-eligible citizens	10	50	Percentage (%)	Not Applicable		
Strategic Objective (3)		Enabling citizens to obtain suitable housing financing				
Relevant Vision 2030 Objectives		Enable citizens to obtain a suitable residence Equip individuals with financial planning tools				
Key Performance Indicators	Baseline	2020 Target	Unit	Regional Benchmark	International Benchmark	
Percentage of Saudi families owning homes	47	52	Percentage (%)	48	64	
Percentage of real estate financing to non-oil GDP	8	15	Percentage (%)	16	75	
Percentage of families who obtained housing subsidy out of the total enrolled families in ownership tracks.	0	40	Percentage (%)	Not Applicable		
Percentage of families who obtained housing support to qualify them to obtain housing financing.	0	60	Percentage (%)	Not Applicable		
Average waiting period to obtain housing financing.	15	5	Year / Financing	Not Applicable		

Furthermore, the National Transformation Program 2020 (NTP, 2020) aims to transfer the current situation of the housing sector as follows. First, it will shift from depending on government funding for the development of housing sector to incorporate and increase private sector funding. Second the limited role of the third sector will be transformed to active participation. Third, from short

supply of affordable housing for low- and middle-income people, it will aim to increase the supply of affordable housing for these groups. Fourth, it will transfer from the lack of a comprehensive development housing plan that cooperates with other development plans, such as employment and urban planning, to developing mixed income community life, play, and work. Finally, there will be a shift from limited continuation of the housing sector to basic economic fundamentals to increase the economic contribution of the housing sector. The following Table 3-6 shows the current situation and the set target for the housing sector within the National Transformation Program.

Table 3-6 The transformation target of Saudi Housing Sector with the National Transformation Program 2020 (Saudi Vision 2030, 2019)

Current Situation	Target in 2020
Reliance on slow government funding.	Increase availability of private sector funding options backed up by guarantee and support system.
Limited role for non-profit sector – including cooperative housing associations – in the Saudi housing market.	Active participation of non-profits in access programs for low income groups. Establishment of cooperative social housing programs to increase supply.
Limited availability of middle- and low-income housing units.	Increase middle- and low-income housing stock according to modern construction techniques and optimally manage current units in the market
Housing plans incompatible with other development plans (e.g. employment, urban planning etc.).	Develop medium density communities with a full lifestyle approach (work, accommodation, retail, entertainment and education).
Limited contribution to basic economic fundamentals (e.g. GDP, jobs creation, localization of content etc.).	Grow economic contribution of housing sector, in accordance with Vision2030 aspirations.

Hence, from the above table, we can see that the government seeks to move to enabling strategies by transferring to partnerships with the private sector and with third sector organizations and increase the supply of housing units for middle- and low-income people.

Moreover, within the National Housing Program (NTP, 2020), the Ministry of Housing subdivided the beneficiaries of housing based on their income level in order to design appropriate affordable housing products that are suitable for their income. Four categories are identified, as set out in the following :

- Bankable: Able to obtain funding without state support with high ability to pay (e.g. high income, acceptable or low obligations).
- Quasi-bankable: Requires support or financial guarantees (e.g. middle income with high obligations).

- Non-bankable: Unable to obtain bank funding due to low financial solvency (i.e. low income with high obligations).
- Low income and Special categories: Low income households, including social security beneficiaries.

The middle-income segment of beneficiaries, who are identified as bankable and quasi-bankable, will have the three option of housing products, either PPP (off-plan) housing products, self-build (government loan), or to pay for a housing product direct from the existing housing in the market (government loan). The second segment is the low-income group, who are non-bankable: they will have access to housing through social housing, or will receive restoration loans, rent or rent-to-own subsidies (Saudi Vision 2030, 2019), as illustrated below in Figure 3-15.

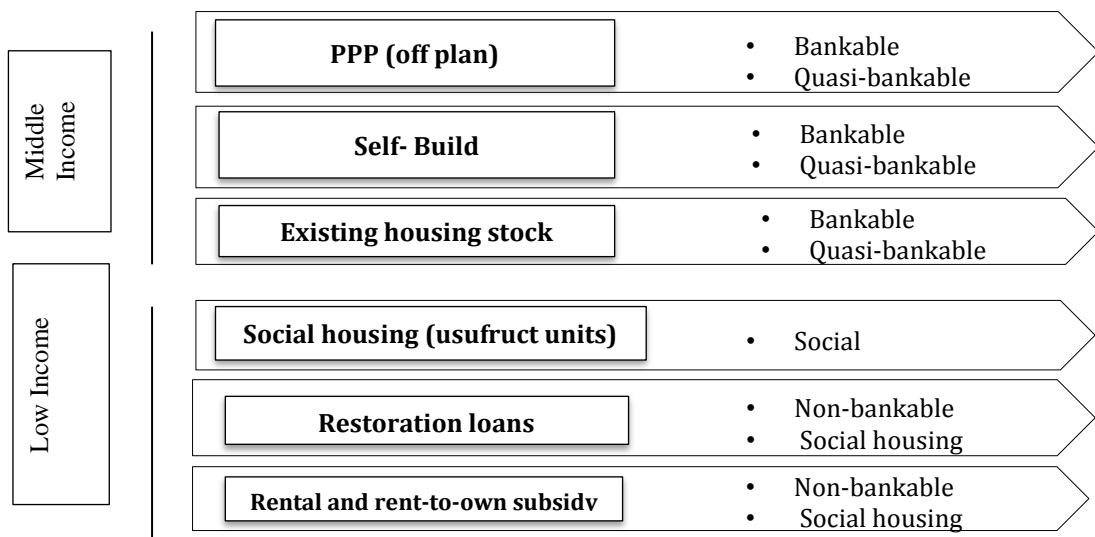


Figure 3-15 different housing products based on the different categories of beneficiaries (Saudi Vision 2030, 2019)

From the above figure, it is clear that the government has started to implement PPP for the delivery of affordable housing for middle income groups in Saudi Arabia. Hence, this research will investigate the challenge of the new implementation of PPP as a mechanism for the delivery of affordable housing for middle-income groups, which has recently been adopted in Saudi Arabia.

3.8 Summary

There is no single definition of affordable housing, but there is one common definition that is generally used, which is that affordable housing is housing that can be purchased by families using no more than 30 percent of household income. For this research, the definition of affordable housing adopted is housing that meets the need, increases the quality of life, and reduces the cost to the household. Likewise, there is no single measurement for affordable housing, but the most widely accepted measures internationally are the Ratio approach and the Residual method. Conventional/formal and non-conventional/informal delivery are the two main types of affordable housing delivery mechanism. Non-conventional/informal housing is a response to the failure of formal housing delivery through the market. In Saudi Arabia, there are a number of programmes and initiatives for the development of affordable housing; however, these programmes are insufficient to fulfil the existing demand for housing. The Saudi government's intervention in the housing sector has gone through various stages and a range of different government policies have been formed. The supply of affordable housing in Saudi Arabia does not meet the demand due to the lack of a national housing strategy, population growth, high urbanization rate, the high cost of land, construction costs, and funding difficulties. Government intends to solve these housing challenges through the adoption of PPP, which they have only recently adopted for the development of affordable housing within the new Saudi Vision 2030. Furthermore, the adoption of PPP in affordable housing development comes as part of the enablement strategy, in response to the failure in the housing market. Expected benefits of the adoption of PPP in the Saudi Housing sector include expertise from the private sector, increased housing supply, relief of the government's financial burden, reduced cost of housing projects, reduced risk of investment, easier access to housing finance, and shorter waiting lists for housing products. Finally, this chapter highlights the transformation of the Saudi housing sector from provider to enabler within the National Transformation Program 2020, where the Saudi government has started to implement PPP for the delivery of affordable housing for middle income groups of beneficiaries, who are identified as bankable and quasi-bankable.

CHAPTER IV – RESEARCH METHODOLOGY

4 RESEARCH METHODOLOGY

4.1 Introduction

This chapter will explain the methods and approach used in this research in order to meet the aim and objectives and to answer the research questions set out in Chapter 1. In addition, it will discuss the rationale and justification for the adoption of the design and methods selected for the research. Saunders' Research Onion model has been adopted to explain the research design used. Therefore, the structure of this chapter is based on the following: research design and philosophy, research approach, methodological choice, research strategy, time horizon, and data collection procedure. Additionally, this chapter will explain the analysis of data and the ethical principles to which the study adheres.

The study falls within the remit of social science research because its aim is to examine a human behaviour where social actors are contributing to a problem. As such, from the philosophical stance, subjectivism is an assumption of humanities and art where social factors play a sequence of actions and perceptions to create social reality. Furthermore, social research is intended to explore the use of controlled enquiry to locate, define, recognise, describe, assess and change patterns or uniformities in social life (Blaikie, 2009). Therefore, the theoretical perspective of social research will guide this study by clarifying the factors that influence the implementation of PPP in the development of affordable housing in Saudi Arabia.

4.2 Research Design

Research design is a guideline that is adopted by the researcher to conduct a study. A simple definition of research design is provided by Creswell (2014), who states that research design is "the plan for conducting the study". In addition, according to Kagioglou et al. (2000), it is essential for the researcher to understand and create integration and relationships between each major dimension of the research process. Therefore, research design is a fundamental consideration when conducting a piece of research.

A number of models have been developed to plan research design. For example, Crotty (1998) identified four elements to be considered by researchers when designing their studies, namely epistemology, the theoretical perspective, methodology, and methods. On the other hand, Kagioglou et al. (2000) proposed a "nested" approach that includes three layers: the outer layer being the 'research philosophy', followed by the 'research approach' and then the 'research techniques'. A third model, presented by (Saunders, 2007), included three additional layers,

resembling a ‘research onion’ in the following order: research philosophy, research approaches, research strategies, choices, time horizons, techniques and procedures. Abuelmaa’atti (2012) produced a useful summary of these three models, as summarised in Table 4-1, below:

Table 4-1 the Comparison of elements within three research design models (Abuelmaa’atti, 2012)

Research Design Elements (Crotty, 1998)	Nested Research Model (Kagioglou et al., 2000)	Research Onion (Saunders, et al., 2003)
Epistemology Theoretical perspective	Research philosophy	Research philosophy
		Research approaches
Methodology	Research approaches	Methodological Choices
		Research strategies
		Time horizons
Method	Research techniques	Techniques and procedures

The research onion provides the most comprehensive research design model. It begins by building the research methodology from an external layer, ‘Philosophy’, to another inside layer, ‘Techniques and Procedures’, and so on. Therefore, the research will be guided by the six layers in Saunders’ research onion (Saunders et al., 2016), to develop an outline for the design of this study, as shown in the following figure (Figure 4.1).

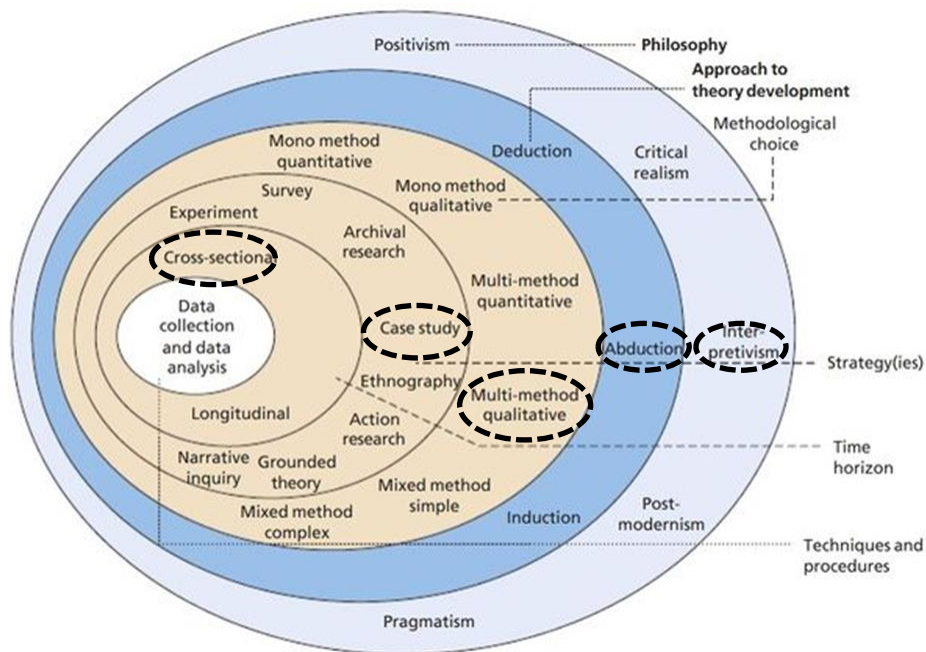


Figure 4-1 Research onion (Saunders, Lewis, & Thornhill, 2016)

The outer layer of the research onion is the philosophy of the research, which influences the methodology and determines the position of the researcher relative to the research. According to

Saunders et al. (2016), the methodological choice, research strategy, data collection techniques, and analysis procedure will be underpinned by the research philosophy. Furthermore, the research philosophy shapes the understanding of the research question, research method, and interpretation of research findings. Moreover, the research philosophy allows the researcher to design a study in a coherent way such that all the design elements of the research fit together. The following section will describe and explain the research philosophy adopted for this research.

4.3 Research philosophy

Several authors have indicated that it is important for researchers to consider research philosophies when determining the research design. The term "research philosophy" refers to "a system of beliefs and assumptions about the development of knowledge" (Saunders et al., 2016, p. 124). Furthermore, according to Easterby-Smith, Thorpe, and Jackson (2012), there are several reasons why it is vital to understand the research philosophy. Firstly, it will increase the clarification of the research design; secondly, within the context of specific research, the philosophy will help the researcher to determine which designs will work and which will not. Thirdly, the research philosophy may help the researcher to identify and create a design that might be considerably different from his real-world experience. Therefore, research philosophy is an essential part of planning research design.

Within the research philosophy, it is important for the researcher, when conducting a study, to look to the three different assumptions: ontological, epistemological and axiological. According to Easterby-Smith et al. (2012), scientists and social scientists generally draw from different ontological and epistemological assumptions. In addition, according to Sexton (2003), in terms of research philosophies, contrasting researchers' viewpoints are characterised by ontological, epistemological and axiological assumptions. The following section will describe and elucidate the three different assumptions.

4.3.1 Ontological assumptions

Ontological assumptions refer to assumptions about the nature of reality (Collis & Hussey, 2014). Ontology can be defined as a set of beliefs about what the world that we are studying truly is (Lee & Lings, 2008). Within this assumption, the two key positions are objectivism and constructivism. Objectivism asserts that phenomena and their meanings have an existence that is independent from the actors. On the other hand, constructivism asserts that phenomena and their meanings are continually being accomplished by actors (Sutrisna, 2009). Constructivism suggests that the social world is a social product and that people can help to understand it (Bryman & Bell, 2003).

Furthermore, Easterby-Smith et al. (2012) identify two positions within the ontological assumption as realism and relativism. Realism assumes that only one reality exists. On the other hand, relativism suggests that different versions of reality can be reached by people who hold different viewpoints. Moreover, in relativism, the truth of a specific idea or theory can be identified through discussion and agreement between social actors. Hence, it can be recognised that there are two different ontological positions: objectivism (realism) and constructivism (relativism). The specific context of this research is to explore the implementation of PPP in the housing sector in Saudi Arabia, through the social actors who are involved in the implementation process. Constructivism (relativism) as a standpoint for the ontological assumption – that is, that reality is continuously constructed by social actors – has been adopted in this research study.

4.3.2 Epistemological assumptions

Epistemology refers to the theory of knowledge (Sutrisna, 2009). Positivism and interpretivism are the two extreme positions of the epistemology continuum. According to Collis and Hussey (2014), positivism and interpretivism can be identified as primary opposites or extremes within the continuum, with a range of other research philosophies aligned between these two extremes. The key idea of positivism is that the social world exists externally and it is appropriate to measure it through objective methods rather than infer it subjectively through sensation, intuition, or reflection (Easterby-Smith et al., 2012). On the other hand, in interpretivism, the researcher is directed to attempt to understand abstract phenomena from the individual perspective, investigating interaction among individuals (Creswell, 2013). In addition, interpretivism aims to obtain a new and better understanding and clarification of the social world and context (Saunders et al., 2016).

The researcher believes that it is appropriate to review the current PPP implementation in the delivery of affordable housing through the interpretation and experiences of the social actors involved. Key aspects will include enquiries from various individuals from both the private and the public sector who are involved in partnership for the delivery of affordable housing. However, this would not be possible according to the positivist philosophical stance, since positivism is a belief that reality is independent from us, and this does not fit with the research aim and objectives. Therefore, interpretivist characteristics are most suited to this research.

4.3.3 Axiological assumption

Axiological assumptions refer to the role of values and ethics within the research process, and incorporate questions on how we act as researchers, with both research values and our own values

(Saunders et al., 2016). Within the axiological assumption, the continuum extends from ‘value-free’, where the researcher does not impose any value judgments, to ‘value-laden’, where the researcher’s value judgments are involved in the research study (Kulatunga, Amaratunga, & Haigh, 2007). This research takes a value-laden standpoint, as the researched data are individual perceptions and experiences of reality, not ‘objective’ reality itself.

The ontological, epistemological and axiological philosophies can be reflected in a continuum on which positivism and interpretivism are the two extremes. The following figure (Figure 4-2) shows the philosophical stance of the research concerned within the research philosophies’ continuum.

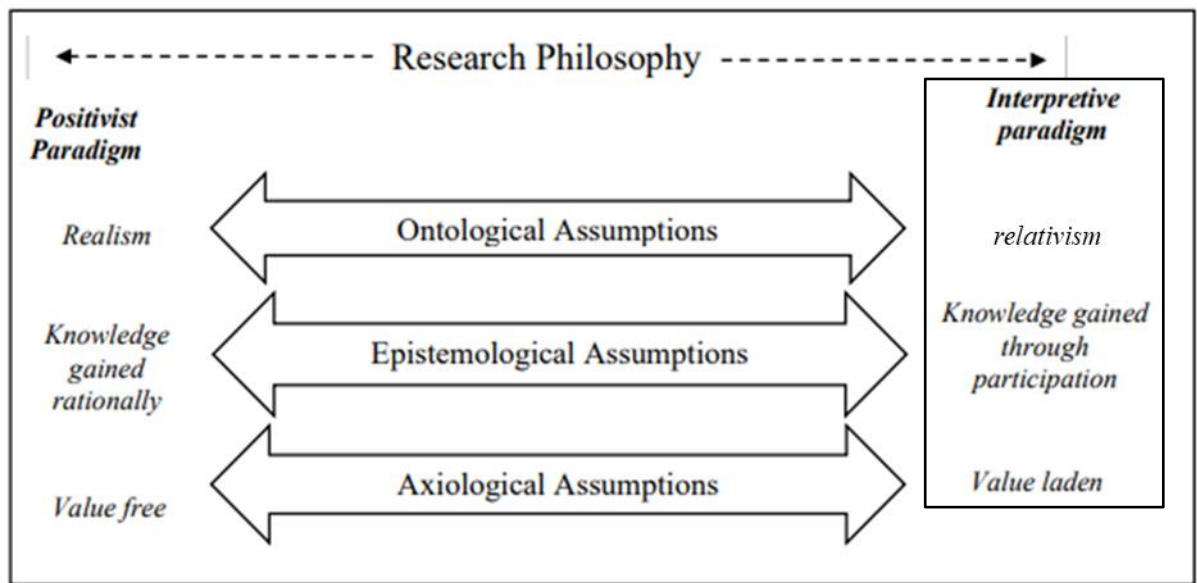


Figure 4-2 philosophical stance of the research concerned within the research philosophies’ continuum

From the above figure, the interpretivist paradigm has been adopted. The characteristics of interpretivism are multiple realities (perspectives) and understanding of the fact that knowledge is gained through the perceptions of the people in the case studies, and it is value-laden, as it is based on the multiple social constructions of meaning, as all subjective data are encrypted by people’s personal beliefs, and the researcher’s beliefs also affect how subjective data is perceived. Inductive reasoning strategies explore, describe, understand, explain, change, and evaluate. Interpretive words (spoken or written) add meanings to gain understanding of phenomena. The aim of this research is to understand how PPP could contribute towards improving the delivery of affordable housing for middle-income households, and to develop a framework for utilising PPP arrangements in Saudi Arabia. The undertaken study lies in ideas of empirical real-world experiences, which are related to the field of social science. Thus, the PPP stakeholders’

viewpoints cannot be understood without examining their opinions of their experiences. Therefore, interpretivist characteristics are most suited to the philosophical stance of this research.

The following layers of the Saunders onion discuss the research approach, which is beyond research philosophy. The following section will explain different research approaches, namely deductive, inductive and abductive, and justify the selected approach that has been adopted for this research.

4.4 Research approach

There are three different approaches for conducting a study. Saunders et al. (2016) describe those three approaches as deductive, inductive and abductive. Within the ‘deductive’ approach, the conceptual and theoretical structure is developed and then tested through empirical observation: thus, particular instances are deduced from general inferences. The inductive approach is the opposite of the deductive, where the study develops theory from the observation of empirical reality (Collis & Hussey, 2014). The main difference between the deductive and the inductive approach is that the deductive approach composes a hypothesis based on the current body of knowledge, and then conducts data collection and data analysis to test that hypothesis. Researchers performing inductive research, in direct contrast, conduct data collection and data analysis to reveal findings, whilst using the current body of knowledge as a fundamental part of their data analysis where they consider this to be appropriate (Sutrisna, 2009).

The third approach is the abductive approach, which combines characteristics of both the inductive and the deductive approach. According to Saunders et al. (2016), an abductive approach is an effective combination of both approaches by moving back and forth between them. Also, Lee and Lings (2008) argue that in most real-world research contexts, induction and deduction are likely to be linked together, as illustrated in the following figure (Figure 4-3):

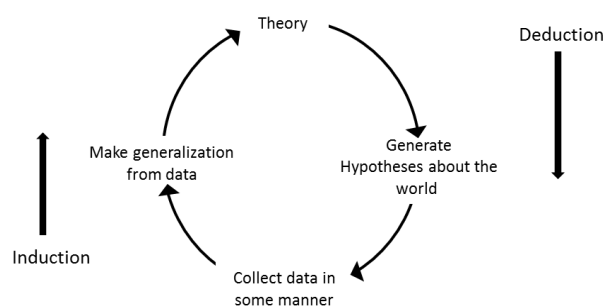


Figure 4-3 The difference between inductive and deductive approaches (Lee & Lings, 2008).

This research therefore utilized the abductive approach. The study started with a deductive approach from the literature review in order to identify the factors that contribute to the implementation of PPP for the development of affordable housing. A conceptual framework was developed, based on the literature review. The research used suitable qualitative methods of data collection to evaluate these factors within the Saudi context, and to induce other factors that are closely linked to the PPP implementation of affordable housing within the specific context of Saudi Arabia. The following layers of the Saunders onion determined the methodological choice of the research, which will be explained in the following section.

4.5 Methodological choice

Researchers could use quantitative or qualitative methods, or may combine both types of method in a mixed-methods approach. Within the quantitative research method, a researcher tests a theory by examining relationships between variables and measuring those relationships numerically, and then analysing these results using a range of statistical and graphical techniques (Saunders et al., 2016). On the other hand, qualitative research begins with assumptions and the researcher's use of interpretive/theoretical frameworks that inform the study of the research problems by addressing the meanings of individuals or groups (Creswell, 2013). Moreover, qualitative methods allow the researcher to obtain elements of subjective daily experiences and broader structural considerations (Tonts, Thompson & Maginn, 2008). Mixed method research is the branch of multiple research methods that combines the use of quantitative and qualitative data collection techniques and analytical procedures (Saunders et al., 2016).

A qualitative approach has been utilized for this research, as this approach is more appropriate for exploring the implementation of PPP for the delivery of affordable housing for middle income households in Saudi Arabia and thus addressing the research objectives. Moreover, the methodological choice of this research is compatible with the adopted philosophy and issues addressed in this study. This research aims to understand how PPP could contribute towards improving the delivery of affordable housing for middle-income households in Saudi Arabia by practitioners involved in the implementation of PPP in the housing sector. Thus, the qualitative approach is the most suitable approach.

In contrast, the quantitative approach lacks the ability to provide data with deep meaning to this research. According to Naoum (2013), the quantitative approach investigates social or human problems by testing hypotheses or theories, measured with numbers and analysed with statistical procedures. That is not the aim of this study. Furthermore, it is known that in-built environment

research, a mixed method approach is used with positive features, but the objective of the present study can be achieved by using the qualitative approach.

4.6 Research strategy

In order to ensure that research strategies are the most suitable for obtaining specific results for the research problem, Yin (2014) suggests three conditions to help choose the research strategy: the type of research question, the required control of the researcher over behavioural events, and the degree of focus on contemporary events, as shown in Table 4-2, below:

Table 4-2 Relevant situations for different research methods (Yin, 2014)

Research methods	Forms of research questions	Requires control of behavioural events	Focuses on contemporary events
Experiment	How, Why?	Yes	No
Survey	Who, What, Where How many, how much?	No	Yes
Archival analysis	Who, What, Where How many, how much?	No	Yes/No
History	How, Why?	No	No
Case Study	How, Why?	No	Yes

As shown in Table 4-2, based on the nature of this research, the main data were gained through social interactions with PPP practitioners who are involved in the delivery of affordable housing in Saudi Arabia. The control of behavioural events required is not possible because this research values the richness of information provided by these social actors. Parallel to this, the research aims to answer the main ‘How’ question, thus eliminating the choice of Survey. Archival research and history could not be adopted in this research, where the richness of information is gained from an in-depth study involving social actors, as it requires investigation into archives and periodic documents because this study focusses on contemporary events. Thus, the strategies left to be considered are the case study.

A case study is “an empirical enquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident” (Yin, 2014, p. 15). In many situations, case studies are used to contribute to our knowledge of individuals, groups, organisational, social, political, and related phenomena. Case studies also allow researchers to gain an in-depth understanding of the complexity of the situation and help generate data to develop a hypothesis or theory (Robertson, 2008). In addition,

within the housing sector, case studies have proved particularly useful as a means of monitoring and evaluating a wide variety of policy and practice initiatives.

The case study strategy was chosen as a result of the judgement that it is the most appropriate research strategy in this context, as this research consists of ‘how’ questions. This study intends to investigate “*How PPP could contribute to better development of affordable housing in Saudi Arabia?*”. Furthermore, a case study strategy is used to conduct this research in order to gain an in-depth understanding of the challenges that face the implementation of PPP to serve the provision of affordable housing in Saudi Arabia from different stakeholders’ perspectives. Case study research is particularly appropriate because PPP has only recently been implemented in the housing sector in Saudi Arabia, and there is thus no previous research to consult. Therefore, the case study was selected as a research strategy.

4.6.1 Designing Case Study Strategy

A case study can take a number of different design possibilities. According to Yin (2014), the distinguishing features of the case study design must be based on four case study strategies, which in turn are based on two dimensions: single cases vs. multiple cases, and holistic cases vs. embedded cases. This is illustrated in the following Figure 4-4:

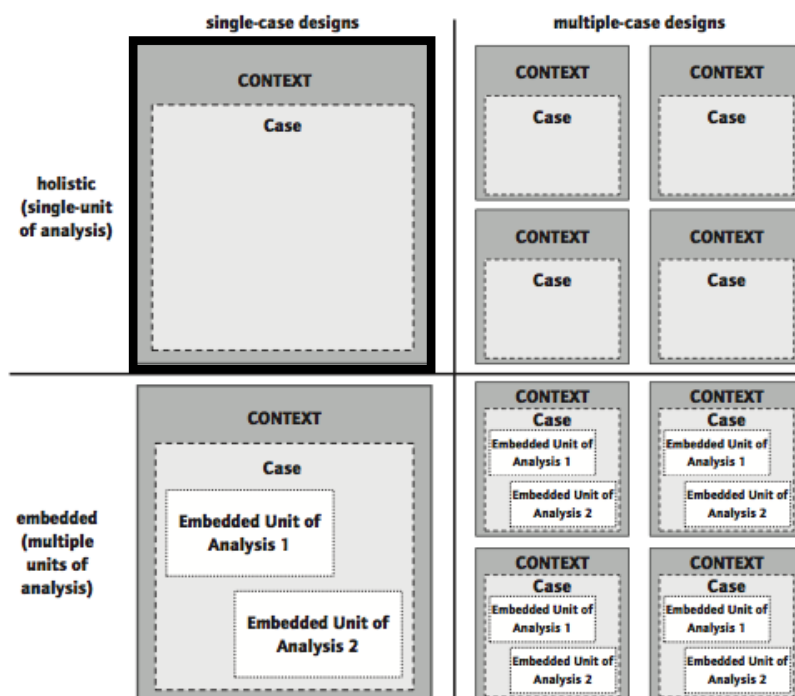


Figure 4-4 Case Study Design (Yin, 2014)

The single case study offers greater in-depth understanding of phenomena. According to Saunders et al. (2016), a single case may be selected purposively because it provides an opportunity for the researcher to observe or analyse a phenomenon that few have observed before. There are five rationales for selecting a single case study, identified by Yin (2014) as: critical, unusual, common, revelatory, or longitudinal. Thus, the Saudi Ministry of Housing was selected as a critical unique case for this study. This decision was made mainly because the Saudi Ministry of Housing is responsible for the implementation of PPP for the delivery of affordable housing. Furthermore, the Ministry of Housing was established as the core agency responsible for planning, coordinating, monitoring and implementing housing strategies. In 2016, after the government's announcement of the Saudi Vision 2030, the ministry became responsible for playing an important role in implementing that vision (PPP as a housing delivery mechanism). In addition, the Ministry of Housing has established a PPP Unit, which is responsible for the implementation of the partnership, and has identified private developers to work as partners in PPP housing following the guidance of the Saudi Vision 2030. Thus, due to the high level of centralisation within Saudi power structures, the Ministry of Housing is the only agency responsible for the creation and implementation of PPP schemes.

Unit of analysis

The unit of analysis in this study is the different factors that affect the implementation of PPP in delivering affordable housing. The reason for choosing this unit was to investigate the challenges faced by different stakeholders in the PPP housing scheme in Saudi Arabia towards the effective implementation of PPP for affordable housing.

4.7 Time Horizon

This layer of the research onion explains the time horizon in which the research takes place. According to Saunders et al. (2016), research projects may be cross-sectional or longitudinal. Even though the nature of the PPP will take a long time, even reaching 30 years, this study will not take a longitudinal approach, because a cross-sectional approach is more suitable for the nature of a doctoral study and it is not possible to access the organisation using a longitudinal approach. Therefore, a cross-sectional approach is best suited for this research.

4.8 Data Collection Techniques

Both secondary and primary data were utilized in this research. Secondary data are “data originally collected for different purpose and reused for another research question” which can help researchers to expand their knowledge and develop their assumptions. On the other hand, primary data are defined as “original data collected for specific research goal” (Hox & Boeije, 2005, p.593). Both types of data contain rich information. For the present study, the secondary data will come mostly but not exclusively from government reports, books, articles, and legislation, as well as relevant websites, while primary data will be collected through interviews. Furthermore, this research is inclined in the direction of the interpretivist stance, in which research intends to go deeper into the implementation of PPP for the delivery of affordable housing for middle income people in Saudi Arabia based on the experience of the social actors. Data acquired using a questionnaire might not help to achieve clarification and deep understanding of the current practice.

A combination of document reviews and interviews has been utilized to achieve an in-depth understanding of the implementation of PPP in the Saudi housing sector. The benefit of utilizing both document reviews and interviews is that the two approaches complement each other. For example, in the case of limited interpreting of the text from the document review, it can be combined with the actual experiences of the social actors from the interviews, and that will help to add value to the text in the documents. According to Bowen (2009), qualitative research is expected to draw upon multiple sources of evidence in order to seek convergence and corroboration. The sources of evidence were selected carefully to achieve the aim and objectives of this research. The following will discuss in detail the research techniques employed in this research: first document review, followed by semi-structured interviews.

4.8.1 Document review

Case studies can often involve detailed studies of documentary and archival records, as such material is essential in setting the context for the case under consideration. Documentation plays an explicit role in any data collection for case study research because it can provide more detailed information that might be integrated with other sources and can help the researcher to make inferences (Yin, 2014). Furthermore, according to Bowen (2009), documents can serve as part of a research undertaking for a variety of purposes. First, documents can provide data on the context of the research. Second, the data from the documents can suggest some questions that are necessary to be asked and situations that need to be explored and observed as part of the research. Third,

documents offer researchers supplementary data, which can be valuable additions to a knowledge base. Fourth, documents can allow the researcher to gain a means of tracking change and development: where various drafts of a particular document are available and accessible, the researcher can have the opportunity to compare them to identify the changes.

Documents that reflect the Saudi PPP housing scheme and the current implementation of PPP in the delivery of affordable housing for middle income households in Saudi Arabia were reviewed, including the following: a Ministry of Housing enabling program that was implemented within the PPP housing scheme, real estate developer qualifying criteria, PPP structure, PPP housing projects, National Transformation Programs (2016), the Ministry of Housing report (ESSKAN) and the Residential Development Land Guidebook. These documents were used in developing an understanding of the current practice of PPP in the housing sector in Saudi Arabia and helped to form the interview questions, in order to explore the extent of the adaptation of PPP in the Saudi housing sector and the current challenges that face relevant stakeholders.

4.8.2 Interviews

Interviews provide researchers with an opportunity to more fully explore a particular topic with a respondent. In addition, interviews are considered essential sources of evidence for a case study, as most case studies are about human affairs or actions (Yin, 2014). Within these interviews, the researcher looks for in-depth information to reach an answer which taps deeply into the experience, opinions, and feelings of the respondent (Lee & Lings, 2008). Interviews can take an unstructured, structured or semi-structured format (Creswell, 2013). Within an unstructured interview, the researcher aims to explore a general area of interest, while semi-structured interviews cover a list of themes and key questions. Within a structured interview, the researcher follows a standardised set of questions.

In this research, semi-structured interviews were selected as the main qualitative technique, due to the need to gather information from practitioners of PPP in the housing sector. Saunders et al. (2016) identify four situations in which to use an in-depth or semi-structured interview. The first consideration is the purpose of the research, when the researcher undertakes an exploratory study or exploratory element: for example, when the researcher needs to understand the reason for a decision that the research participant has taken. Secondly, where the value of the personal contact is important, a personal interview may achieve a higher response than a questionnaire. The third consideration is where the nature of questions have followed the circumstances, or when there are a large number of questions, or when the questions are complex or open-ended in nature, and

where the order of questions may need to be varied; while the fourth is the length of time required and the completeness of the process. Therefore, semi-structured interviews were selected for this study.

The selection of semi-structured interviews enabled the researcher to use some pre-formulated questions but not to be strictly bound to them. This helped the researcher to gain an in-depth understanding of the state of the art in practice; existing PPP arrangements and programmes for the development of affordable housing. In addition, the interviews identified the challenges that face stakeholders and decision-makers involved in PPP arrangements for the development of affordable housing. These semi-structured interviews were based on an interview guide, which was developed based on the conceptual framework in section 2.8 and contained questions relating to issues of the current practice, such as the role of actors and relationships between partners, as well as the challenges that face PPP implementation in housing projects.

4.8.2.1 Interview sampling

The Saudi Ministry of Housing identifies partners in PPP housing schemes based on the following criteria: organization capability (CV of the higher management, organization structure); real estate developer capability (including project management, architecture and engineering work, marketing, and construction management); financial capability of the organization; portfolio of the organization; organization's development plan for the housing projects; and whether this organization has creativity or added value features (concrete factories, etc.) (Ministry of Housing, 2017c). Therefore, based on these criteria, PPP partners are classified into four rankings. Currently, there are 52 real estate developers which have been identified as partners. Semi-structured interviews were conducted with personnel at top management level from identified developers, and also with top management officials who are responsible for the implementation of PPP within the Ministry of Housing PPP Unit.

Interview Sample Techniques. The selection of interview respondents was based on purposive sampling techniques. According to Saunders et al. (2016), in order to answer the research questions and meet the research objectives, purposive sampling techniques will help the researcher to select case studies accurately. Furthermore, purposive sampling will help the researcher to gain the required knowledge and gain rich information from respondents who are non-randomly selected due to the need to explore issues in depth with professionals with more expertise than the wider community. If the random sampling technique were adopted, it might not achieve the objective of the research. Therefore, purposive sampling techniques were utilized, as the researcher had a clear idea regarding the respondents of the research.

Sample Size. Fourteen interviews were conducted with participants from the Saudi PPP housing schemes from both the public and the private sector. The size of the sample in this qualitative research is less crucial than in statistical research samples. Patton (2002) recommends that the final size of the sample should be determined during the study when semi-structured interviews are the form of data collection. Qualitative research focuses on a particular subject in detail, in contrast to the quantitative method, which is more suited to situations where the sample size is very large and can later be generalized to large population (Myers, 2013). However, Saunders et al. (2016) suggest that the minimum sample size for semi-structured in-depth interviews should be between 5 and 25.

4.8.3 Focus group

The researcher utilized a focus group to develop the framework for this study. "Focus groups are a form of qualitative data collection which involves the simultaneous participation of a number (usually around five to eight) of respondents, along with a moderator or facilitator" (Lee & Lings, 2008, p.221). This strategy helps to bring together professionals from both the public and the private sector who are participants in the implementation of PPP in the Saudi housing sector in order to develop the proposed framework. The utilization of focus groups presents many advantages to the study and allows in-depth discussion by using a qualitative method known as Interpretive Structural Modelling (ISM). ISM is a methodology for identifying and summarizing relationships between specific items that define an issue or problem. It provides a means to bring order to the complexity of the items imposed by a group (Mandal & Deshmukh, 1994). This approach is extensively explained in Chapter 6.

4.9 Pilot Study

It is widely believed among specialists in research methodology that the questions used in interviews and/or questionnaires should be subjected to preliminary testing, which is known as a pilot study (Collis and Hussey, 2014; Yin, 2014). A pilot study is very important to clarify the words, frame and filtering of the questions. Furthermore, Saunders et al. (2016) declared that the pilot study is conducted to strengthen the validity of the interview questions. Moreover, pilot studies also ensure that the questions used during the interview process are clear, easy to understand and unambiguous for the respondents, and to decide on the right length for each interview.

In addition, a pilot study can help in achieving more exact and accurate questions that link to the respondent's background and the research problem. The pilot study was extremely important, since

it provided a platform to trial and test the interview questions in order to raise the quality of the research data (and by extension, the outcome of the research). Four pilot interviews were conducted with experts who are engaged in housing development in Saudi Arabia, and each interview did not exceed 60 minutes. The pilot study proved very helpful and the entire process provided the researcher with valuable information about the authenticity and credibility of the questions. Based on the results of the pilot study, several changes were made to the order and sequencing of the questions; the language was also adjusted to ensure complete comprehension, and some questions were replaced to make the overall interview clearer and more transparent for the participants. (Pilot Study Results Appendix II)

4.10 Data analysis

In qualitative data analysis, the researcher aims to reach an in-depth understanding of the data collected by focusing on the context. According to Creswell (2013), within qualitative analysis, the researcher aims to make sense of the collected text and image data, which includes segmenting the data (taking it apart) and putting it back together. For this research, both thematic analysis and cognitive map were utilized for analysis of the qualitative data.

4.10.1 Thematic analysis

Thematic analysis, according to Braun and Clarke (2006), “is a method for identifying, analysing and reporting patterns (themes) within data. It minimally organizes and describes your data set in (rich) detail”(P.6). "Themes" are “broad units of information” that consist of several codes combined to form a common idea (Creswell, 2013). Thematic analysis groups words or phrases of similar meaning into broader categories. This approach was adopted to allow the researcher to gain the means, access, and analyse the perspectives articulated by different interview participants so that they can be integrated into a pattern that seeks to explain the social processes under research. The thematic analysis followed a six-step approach, as explained by Braun and Clarke (2006) and set out in the following Figure 4-5.

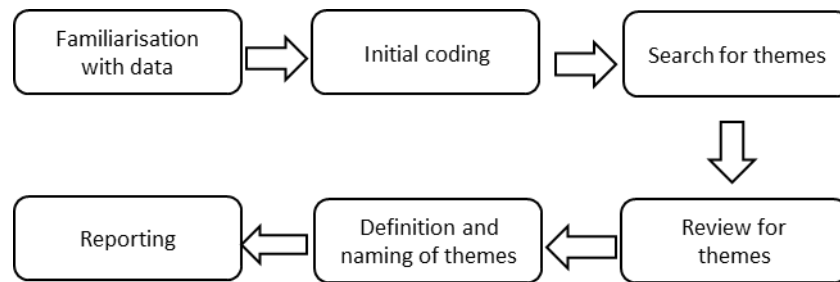


Figure 4-5 Phases of Thematic Analysis (Braun and Clarke, 2006)

Nvivo 11 software was used as a tool to organise the qualitative data collected. This software facilitates data manipulation, browsing, coding, annotation, and access to specific records through a user-friendly interface (Azeem, Salfi, & Dogar, 2012). Moreover, the software can record the movement of the data, and coding patterns, and can map the conceptual classification of codes under general themes, which gives the researcher the opportunity to facilitate a comprehensive, detailed analysis. This software suite was chosen because it allows management of a huge amount of data and enables identification of salient themes within this data, and also enables coding and mapping of the data to be produced.

4.10.2 Cognitive map

Cognitive mapping can be considered as a technique that is utilized to structure ideas and represent the relationship between them. Also, it can be seen as a visual representation of conceptions or system of conceptions about given phenomena. A cognitive map consists of concepts that express an idea (fact or assertion) about an issue, and links between the concepts that are read as ‘may lead to’ (Eden, 1998). Within qualitative studies, cognitive mapping could be utilized to simplify a mental model, enhance and facilitate communication or enhance understanding and manage large volumes of qualitative information (Eden, 1992).

Cognitive maps usually take the form of a network of nodes (concepts) and arrow links (relationships) between these concepts (Eden, 2004). A cognitive map requires that assertions have consequences or implications which answer to the question “so what?” where the map consists of concepts and arrows that represent the direction of implication embedded in the belief or argument (Eden & Ackermann, 2004). Furthermore, it shows and describes how different concepts are related to each other in terms of propositions about phenomena studied or investigated within the research (Scherp, 2013).

Within this research, the aim is to understand how PPP could contribute towards improving the delivery of affordable housing for middle-income households, and to develop a framework for

utilising PPP arrangements in Saudi Arabia. Cognitive mapping was utilized to clarify the relationship between the various main themes and subthemes identified within this study. Within the thematic analysis of the interview data, respondents emphasised the relationships between the various related themes and subthemes that are investigated within the implementation of delivery of affordable housing for middle income people in Saudi Arabia, which was reflected using cognitive mapping. In addition, Nvivo 11 software was used to develop the cognitive mapping for this research.

4.11 Interpretive Structural Modelling (ISM)

Direct and indirect relationships between the identified factors will help to describe the situation far more accurately, and for this purpose, ISM can be utilized (Jayant, Azhar, & Singh, 2015). ISM was first proposed by Warfield in 1973. It can be defined as a methodology that aims to identify the relationship between particular items which define a related problem or issue (Attri, Dev, & Sharma, 2013). In addition, it is a suitable technique to analyse the impact of one variable upon another (Solke & Singh, 2018). The ISM-based approach is one of the most powerful techniques available to solve complex multi-factor problems (Kukuh, Ciptomulyono, Putra, & Suharyo, 2019).

ISM has been used by various researchers in their respective research areas. Within the research area of PPP, ISM has been utilized in several studies (Han, Zhu, Ke, & Hipel, 2019; Iyer & Sagheer, 2009; G. Kumar, Fouzdar, & Duggal, 2016; Y. Li & Wang, 2019). For example, Iyer and Sagheer (2009) used ISM to inform decision-makers and enable them to take appropriate steps by providing them with a hierarchical structure as well as setting out the interrelationships of the risk factors that are associated with the implementation of a PPP project.

To present the characteristics of ISM, a comparison will be made between three common methods that are commonly employed to identify the relationship between factors or components of a problem under consideration, namely: Analytic Network Process (ANP), Analytic Hierarchy Process (AHP), and Interpretive Structural Modelling (ISM). Table 6-1 compares these three methods, as adopted from (Thakkar, Kanda, & Deshmukh, 2008).

Table 4-3 Brief comparison of AHP, ANP and ISM (Thakkar et al., 2008)

Analytic Hierarchy Process (AHP)	Analytic Network Process (ANP)	Interpretive Structural Modelling (ISM)
Discipline of hierarchy has to be strictly followed	Deals with loose networks	Involves a set of interconnected criteria
Fails in complex real-life problems	Useful in real life non-linear problems	Captures the complexities of real-life problems
Assumes functional independence of an upper part of the hierarchy from the lower part	Takes into account interdependencies and non-linearity	Establishes the “leads to” relationships among the criteria
Moderate ability to capture dynamic complexity	Lower ability to capture complexity	Higher ability to capture dynamic complexity

From the above table, it can be seen that ISM has a higher ability to capture the dynamic complexity of the investigated problem. Also, it captures the complexity of the real-life problem under consideration. In addition, ISM establishes causal relationships among the criteria. It consists of a set of interconnected criteria. ISM is a qualitative method that is utilized to identify complex relations of elements by analysing two elements in a pair-wise manner (Pfohl, Gallus, & Thomas, 2011). It is also considered as an interpretative method, as it determines the relationship between variables assessed by the group selected for the study (Balaji, Velmurugan, Prapa, & Mythily, 2016). Thus, ISM has been utilized in the present study.

Within this research, ISM is used to complement the qualitative method and facilitate a better understanding of challenges identified in the previous chapter. However, knowledge of the individual challenges facing the implementation of PPP in the housing sector in Saudi Arabia may not be enough for decision-makers in this sector. In this respect, to describe the situation more accurately, ISM is utilized to provide insightful understanding of the relationships between the various challenges facing the implementation of PPP. Moreover, ISM provides (as output), a directional framework that offers a representative picture of the situation and supports the decision-maker to visualise and identify the nature of the barrier: high priority barriers, highly influential barriers, and barriers requiring additional attention and effort to address (Ravi & Shankar, 2005). Hence, this will help to provide decision-makers within the housing sector in Saudi Arabia with a holistic picture of the level of the challenges and determine the interrelationships between the twenty-four challenges that were identified in the previous chapter.

4.12 Triangulation

One advantage of using a case study as a research strategy is the use of multiple sources of evidence, as the findings of research using case studies will be more accurate and convincing if they are based on several sources of data (Yin, 2014). In addition, the validity of the research will increase if it is based on more than one source of data, and according to Collis and Hussey (2014), this approach avoids the possibility of bias.

The four types of triangulation identified by Patton (2002) are: data triangulation, investigator triangulation, theory triangulation, and methodological triangulation. In data triangulation, the researcher uses more than one source of data. Investigator triangulation is where more than one researcher investigates the same situation (each having different knowledge of the situation or the phenomena). The third type of triangulation refers to research where more than one theory is tested within the same study. Finally, methodological triangulation refers to the usage of multiple methods of data collection. In this research, data triangulation was utilized, as data were gathered from both document reviews and interviews, giving the study more depth, and thus leading to the production of a more satisfactory framework and recommendations.

4.13 Research Validity and Reliability

It is mandatory to infuse aspects like validity and reliability into any research so that the empirical study is of high quality. According to Cavana, Delahaye, and Sekaran (2001), validity is linked to the correct conception of the research measures and reliability is linked to the stability and sustainability of the measurements. In addition, Yin (2014) declared that reliability is defined as “demonstrating that the operations of study, such as data collection procedures, can be repeated, with the same results”. It is particularly important in interpretive research, as it connects with the core of the process and the extraction of rich data (Collis and Hussey, 2014). This research has utilized qualitative methods based on the inclination of the interpretivist stance, with the intention of capturing the actual process and extracting data that is rich in its explanation.

Within this research, data triangulation was utilized by using both document review and interviews as sources of data in order to increase the validity of the study. According to (Saunders et al., 2016), triangulation is one of the techniques that help to establish the quality of research. Moreover, during the collection of data, the most appropriate strategy for the investigation process is applied. As stated by Yin (2014), the best way to increase the reliability of a study is to apply several operational steps to conduct the research. This step cites that all procedures and processes should be authenticated and documented. The following table (Table 4-3) shows the strategy

applied to achieve validation and reliability of research. The proposed framework was validated with a second round of semi-structured interviews, as discussed in the following subsection.

Table 4-4 Strategy for research validity and reliability

Test	Strategy	Actions
Validation	<ul style="list-style-type: none"> • Using more than one source of data and method of collection • Establishing a chain of evidence 	<ul style="list-style-type: none"> • Both document review and interviews were utilized as sources of data • Interviews were conducted with different groups of the PPP housing stakeholders from the public and private sectors • Interview were audio-recorded and transcribe. • The proposed framework was validated by different key stakeholders
Reliability	<ul style="list-style-type: none"> • Develop database • Multi-label run or reviewing of data analysis • Apply several operational steps to conduct the research 	<ul style="list-style-type: none"> • Database were developed (containing both document and interview transcript) • Data analysis was reviewed for reliability check. • The adopted research design was discussed step by step to provide transparency and increase research reliability.

4.13.1 Validation of the proposed framework

A validation exercise was applied in order to obtain a broader view regarding the clarity of the proposed framework, the possibility of its use in practice, barriers to implementing the proposed framework, and recommendations for enhancement. After the development of the proposed framework, a second round of semi-structured interviews was conducted in June 2019 with different stakeholders of the Saudi PPP housing scheme. The stakeholders were from the Ministry of Housing (policy-makers), the National Housing Company – PPP unit (senior relationship managers), private partners (real estate developers), and consultants (from two PPP housing projects). The validation process aimed to ensure that the framework developed is appropriate for implementation within the Saudi PPP housing scheme. Further details of the framework validation process are discussed in Chapter 6, section 6.6.

4.14 Ethical considerations

Participants in the study participated on a voluntary basis. In addition, the data collected from the participants was confidential and protected with appropriate procedures. Interview participants received informed consent, an information sheet, and an invitation letter before the interview to explain the scope of the research, their rights, and why they had been invited to participate. The researcher took the necessary precautions to ensure ethical adherence and professionalism in practice. The interviews were conducted in Arabic because of the geographical context of the study, as well as the focus groups. The research has received ethical approval from the Research Ethics Committee, University of Salford, and was guided by an ethical code of practice (Appendix IV). Furthermore, this research was also granted the required approval from the Ministry of Housing in Saudi Arabia, PPP unit.

4.15 Summary

The research methodological framework, based on the adoption of Saunders' six-layer onion model, is reflected in the main headings of this chapter: research philosophy, research approach, methodological choice, research strategy, time horizon, and research techniques or methods. Furthermore, the selection within each layer is based on the research problem, the nature of the research, and the research aim. A qualitative approach has been utilized for this research, as this approach is more appropriate for exploring and gaining in-depth understanding of the implementation of PPP for the delivery of affordable housing for middle income households in Saudi Arabia and thus addressing the research objectives. This research focuses on how individuals or societies understand and perceive their social world and construct meaning from their experiences. A case study approach has been utilized as an appropriate strategy to conduct this research, with the Saudi Ministry of housing being selected as a single case. Data were collected through document review, semi-structured interviews, and focus groups targeting PPP partners within the Saudi PPP housing scheme. Furthermore, the selection of thematic analysis to allow the researcher to gain access and analyse the perspectives articulated by different interview participants was explained. Moreover, the utilization of cognitive mapping as a technique to structure ideas and represent the relationship between them was also highlighted. The rationale for the specific choice of Interpretive Structural Modelling (ISM) to develop the final framework of this study was elaborated upon. To validate this research, both data triangulation and a second round of semi-structure interviews with PPP stakeholders were utilized. The chapter concluded with a discussion of ethical considerations and requirements from the ethical committee at the University of Salford.

CHAPTER V – DATA COLLECTION & ANALYSIS

5 DATA COLLECTION & ANALYSIS

5.1 Introduction

In Chapters 2 and 3, the researcher provided an overview of the housing challenge in Saudi Arabia and the transformation of the Saudi Government following the announcement of Saudi Vision 2030, where PPP will be utilized as new mechanism for the delivery of affordable housing. In addition, the implementation of PPP in the housing sector was critically reviewed and significant challenges to the implementation of PPP in the housing sector were identified, and the conceptual framework was formulated for use as guidance to explore the challenge of the current implementation of Saudi PPP housing schemes. Furthermore, to gain and develop a comprehensive understanding of PPP implementation in affordable housing in Saudi Arabia, both document analysis and semi-structured interviews are crucial to address the research questions and research objectives which were presented in Chapter 1 of this research. Relevant published documents from the PPP Housing unit were reviewed in order to understand the current practice of the PPP housing scheme in Saudi Arabia and also to identify the challenges faced in the implementation of this scheme. The document review was followed by semi-structured interviews, which were conducted with respondents from both the public and the private sector in the housing PPP unit within the Ministry of Housing in Saudi Arabia in order to have further exploration and reach deep understanding of the challenge. This chapter presents the analysis of data collected from both document review and semi-structure interviews.

5.2 Documents Analysis

Document review was used to represent the current situation and the current practice of the implementation of PPP in the Saudi housing sector and to identify the various associated challenges, and to increase the validity of the data gathered for this research. Documents that reflect the PPP housing scheme and the current implementation of PPP in the delivery of affordable housing for middle income households in Saudi Arabia were collected by visiting the various related authorities, including the PPP unit in the National Housing Company, the Ministry of Housing's Wafi Department, and the Land development department at the Ministry of Municipalities and Rural Affairs. The Saudi Ministry of Housing website was used as another source for collecting relevant documents. For the purpose of this research, only documents identified as relevant to help in understanding and addressing the research objectives will be highlighted. The following section presents the different documents that are related to PPP in the housing sector, and justification for the use of these documents is set out in Table 5-1.

Table 5-1 Documents Detail

No	Document	Source	Justification for the Selection of Documents	
1	Ministry of Housing Enabling Program	WAFI (off plan)	Ministry of Housing Represents the current model of PPP implementation in the housing sector	
		ETMMAM (Housing Development Licensing)	Residential Land Development Guidebook	Ministry of Municipalities and Rural Affairs Reflects the housing development process, which private developers follow with the PPP housing schemes
			National Transformation Programs (2016)	Saudi Vision 2030- Ministry of housing Main reference that sets the target for the Ministry of Housing and the transformation to PPP
		Ownership Forms	Ministry of Housing Reflect and highlight middle income people's access to the PPP housing project	
		White Land	Ministry of Housing One of the enabling programs to increase housing development and encourage private development for partnerships	
		Developmental Housing program	Ministry of Housing Represent access to housing for low income people; that implemented as one of the enabling programs	
2	Real Estate Developer Qualifying Criteria	Ministry of Housing	Represents the measurement of the selection of the PPP private partners	
3	PPP Structure	National Housing Company	Identifies the role of different actors within the PPP housing schemes	
4	PPP housing PROJECT	ESSKAN Report	Presents the scale of the PPP housing project	

The rest of this subsection will describe and analyse the enabling program implemented by the Saudi Ministry of Housing with the implementation of the PPP housing scheme.

5.2.1 Ministry of Housing Enabling Programme

In order to enable the private partner to invest more in the delivery of affordable housing in Saudi Arabia, the Ministry of Housing is taking the approach of an enabling strategy which creates a core transformation of its work. The Ministry of Housing established the National Housing Company, which acts as an operational arm to implement this strategy and helps to transfer the role of the ministry from a direct provider to an enabler and monitor. In order to achieve this transformation, the Ministry of Housing has created many initiatives: the Wafi or on-map sale program (off plan), Etmam (which helps and enables private developers, with different government-related agencies in order to get the licensing and approval for the housing development), the White Land program (to apply fees to residential vacant land), ownership forms and a developmental housing program. Each of these programs will be discussed in the following sections and their impact on the implementation of the PPP housing scheme in Saudi Arabia will be examined.

5.2.1.1 WAFI (off-plan)

Wafi (off-plan) is implemented as a model for the PPP housing scheme by the Ministry of Housing to sell housing units from the developer at an earlier stage after the design or during construction, with the Ministry of Housing working as a guarantor to ensure that the final housing units comply with the initial agreement. The most important goals of Wafi are: to increase the supply on the market, to encourage private developers, to increase transparency in the real estate market, and to reduce the cost of housing units. This program is primarily a PPP program with the private sector and is also known as a ‘sell on the map’ program where the end user purchases the property before it is built.

5.2.1.2 ETMMAM (Housing Development Licencing)

The Etmam centre is a Ministry of Housing initiative aimed at facilitating the launching of the real estate sector in the Kingdom and creating an attractive environment. It provides all the information standards and requirements that private developers need and helps to speed up the process that must be followed to achieve the government’s requirements. The centre consists of all government agencies that are related to housing development, such as the Ministry of Justice and the Ministry of Municipality and Rural Affairs, and will lead to an increase in the supply of housing units by reducing government pressure and locating them in one place. These centres provide services for private developers who wish to develop residential or commercial projects of 50,000 square metres.

Furthermore, from reviewing the housing development process in Saudi Arabia, it is clear that housing development has undergone a process involving many government agencies from both the local and federal government. Figure 5-1 illustrates the current housing development process, which can be explained in the following six steps, as reviewed from Residential Land Development Guidebook (2003).

First, the private developer has to provide the Municipality with land ownership documents and a comprehensive site survey. The Municipality uses these documents to match the site with the structure plan and zoning and link the site with surrounding developments. Then the municipality sends the ownership documents received from the developer to the Ministry of Justice in order to confirm the ownership of the land. If the information is not confirmed, the process will stop, but if it is confirmed, the developer will continue to the next step. This is to prepare and provide the master plan with all the Ministry of Municipality and Rural Affairs Standards and planning regulations, links with surrounding development, topography and hydrological studies, sand test, site survey, and site inventory.

In the third step, the Municipality would match the master plan with the site to ensure that there are no obstacles to its implementation and to confirm that the master plan matches with the surroundings. If the master plan does not match, the process will end at this stage. If it does match, the local Municipality requests approval from the Ministry of Municipality and Rural Affairs. The document is sent to the capital of the Kingdom because Saudi Arabia has a strongly centralised system of government. In this step, the local Municipality would provide the following documents for the Ministry: city structure plan, land ownership deeds, and a plan for sewer systems with contour lines and waste collection sites. In addition, the Ministry would compare the proposed master plan to ensure that it adheres to MOMRA standards. If the Ministry rejects the proposed master plan, the process will end. If approved, the approval is sent back to the local municipality. The development process then starts when the developer has provided an action plan under the supervision of the Municipality and the final approval has been sent to the developer, the Saudi Electricity Company, the Saudi Telecom Company, the Water Authority, and the Ministry of Justice (Residential Land Development Guidebook, 2003). Furthermore, the National Transformation Programs (2016) indicate that this process takes up to 730 days, compared with the international benchmark, which does not exceed 26 days. This reflects the lack of integration and coordination between the different public agencies within the housing development process, which were identified from the literature review as a factor influencing the implementation of the PPP housing scheme. It also indicates the delay of approval, which may jeopardise trust and affect

the success of the PPP housing scheme. In addition, it represents the lack of commitment to streamline the approval process, as streamlining of the licensing of the real estate development was identified as a success factor for the PPP housing scheme and as part of the enabling strategy.

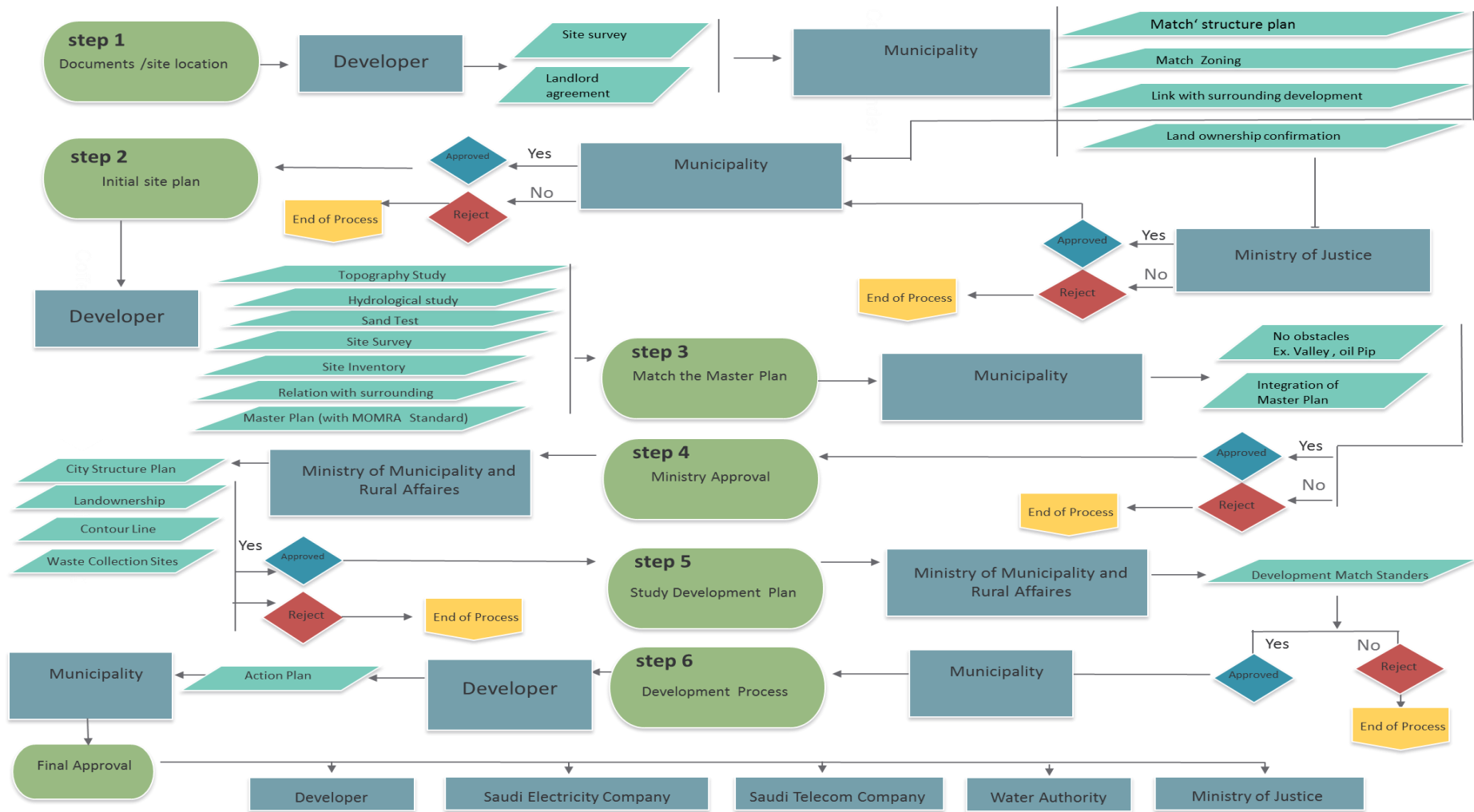


Figure 5-1 The current housing development process in Saudi Arabia (Author, based on Residential Land Development Guidebook, 2003).

5.2.1.3 Ownership Forms

In order to meet the needs of different types of housing for low- and middle-income people, the government created the Masarat Tamalk (ownership forms) program, which is a comprehensive program to evaluate beneficiaries' housing needs and to provide them with suitable housing based on their social and financial situation. This requires the following four-stage procedure: first, to study the social level of the beneficiary; second, to study household income and what proportion he could afford in terms of housing unit cost; third, to determine what kind of housing is suitable for the household; and fourth, to determine which specific housing product is most suitable for the beneficiary. The candidate will be evaluated based on the points that he receives from the four categories.

- The applicant is awarded points based on the number of members of his family up to a maximum of twenty points.
- The applicant shall be granted points based on his financial situation and that of his family members. The maximum number of points awarded under this standard shall be 20 points where the range of the candidate's household income is between 3,000 and 29,0000 SR
- The applicant shall be awarded points based on his age.
- The applicant is also awarded points based on his social and health situation and that of his family members.

Thus, this reflects the measurement of housing affordability that the Saudi Housing Ministry applies to determine the relative need for housing of different households. It also reflects the access for middle-income people within PPP housing schemes.

Furthermore, middle income beneficiaries with monthly income from 4-14 thousand SR will be approved from the ownership form program based on the above criteria. The candidate will be invited by SMS message to visit the PPP housing project site, where the sales department staff will present and help to select and reserve a housing unit within the PPP housing project. After that, the candidate will be asked to visit a representative of the financial institution to receive initial approval for housing funds. Next, the candidate will be asked to submit the official document to a Ministry of Housing representative. Later, the candidate will receive an SMS message from the Ministry of Housing inviting him to visit the financial institutions to sign the funding contract. Therefore, it can be anticipated through the process of the beneficiary's journey within the marketing stage, where the beneficiaries make a reservation of a PPP housing unit before their bankability has been approved by the financial institutions, that this may lead to demand

uncertainty or delay in the PPP housing project, which will be funded by the beneficiaries' loans. The following figure (Figure 5-2) sets out the beneficiaries' journey within the PPP housing scheme in Saudi Arabia.

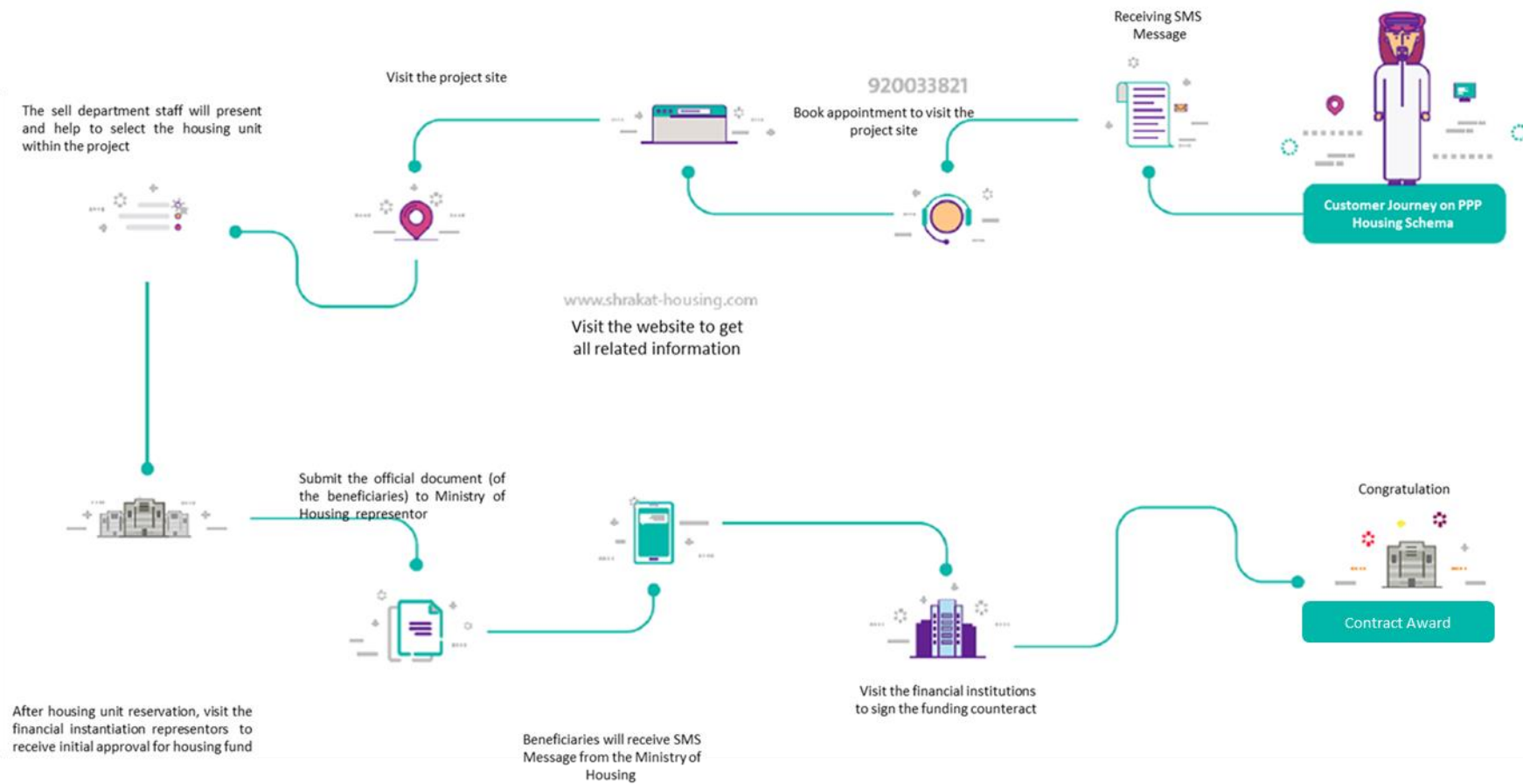


Figure 5-2 Beneficiaries' journey within the PPP housing scheme in Saudi Arabia

5.2.1.4 White Land

The aim of the White Land program is to increase the supply of developed land, to provide residential land with suitable prices, and to bring about equality in the residential market. The program implements annual fees for privately owned vacant land at 2.5% of the land value depending on the following criteria: the use of the land, location, building code, and type of facilities provided on that land. Any landlord who fails to pay these fees will be subject to legal liability. Therefore, as part of its enabling strategy and in an effort encourage the private sector to participate in housing development and increase the number of residential lands, as well as to tackle the issue of the high cost of residential land on the market, the Ministry of Housing established the White Land Program.

5.2.1.5 Developmental Housing Program

Third sector organizations were not identified as an actor within the PPP housing schemes in Saudi Arabia. However, their role was identified through the developmental housing program, which is one of the Ministry of Housing programs that seek to provide housing units for the most needy families in the community, which are sponsored by the Ministry of Labour and Social Development "Social Security" and have completed an application in the housing support portal "Housing". It is articulated to accommodate the people that cannot get access to housing and cannot afford bank loans. Furthermore, this program provides housing units through different options, through other Ministry of Housing projects; for example, the PPP housing project, construction of new housing units, and buying direct from the housing market.

To ensure that the families' needs are met as quickly as possible, the developmental housing program has created a partnership with more than 200 charity foundations in all regions of the Kingdom, to visit and communicate with families in need and assist them in identifying appropriate family housing, follow-up delivery, management, operation, and maintenance of housing units.

5.2.2 Real Estate Developer Qualifying Criteria

In order to provide real estate products of high quality at an affordable price, the Ministry of Housing classifies the real estate developers who will be identified as partners within the PPP housing projects. The classification criteria are based on the following: the organization's capability (CV of the higher management, organization structure), real estate developers'

capability (including project management, architecture and engineering work, marketing, construction management), the organization’s financial capability, the organization’s portfolio, the organization’s development plan for the housing projects, and whether this organization has creativity or value-added features (concrete factories, etc.). This is illustrated in Figure 5-3, below. Within these criteria, the Ministry of Housing classifies the real estate developers’ capabilities based on four classes.

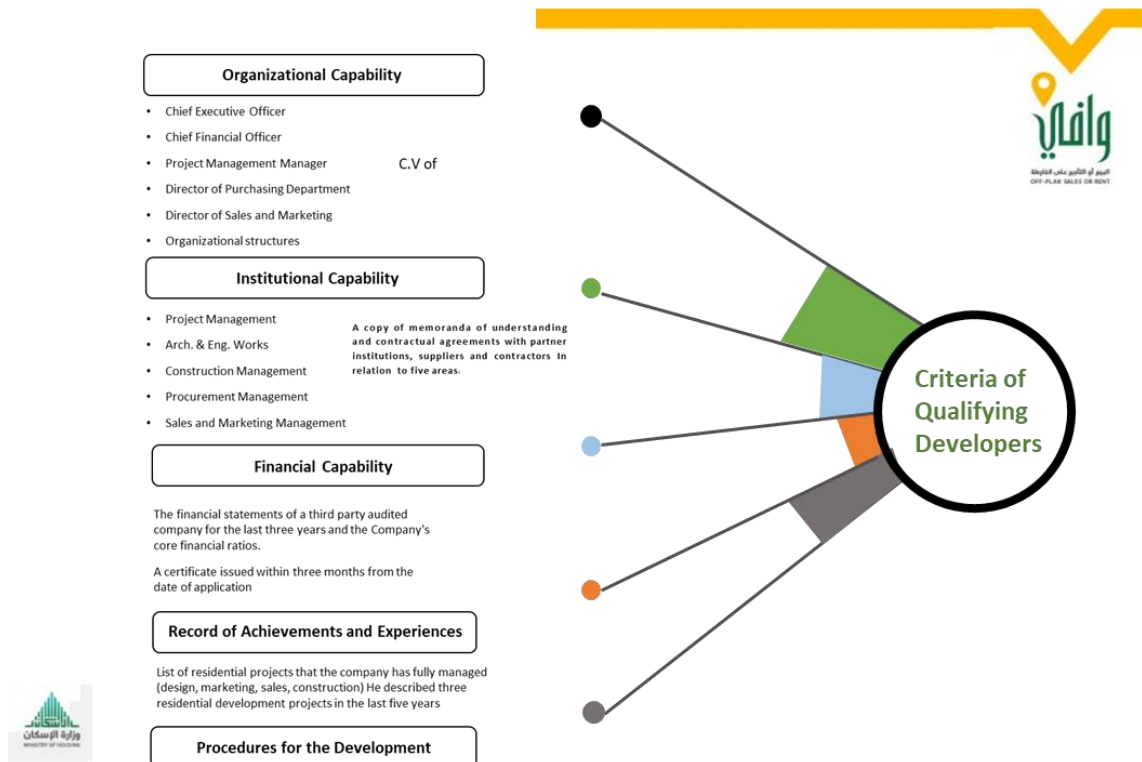


Figure 5-3 Qualification criteria

Based on the above qualification criteria, the distribution of the first- and second-class real estate developers among the different regions in Saudi Arabia is limited. They are concentrated in three main regions – Riyadh, Makkah, and Eastern Province – and absent from other regions. Furthermore, within Bahah, Najran, and Northern Borders, no qualified real estate developer has yet been identified. Figure 5-4, below, illustrates the distribution of qualified real estate developers based on their class.

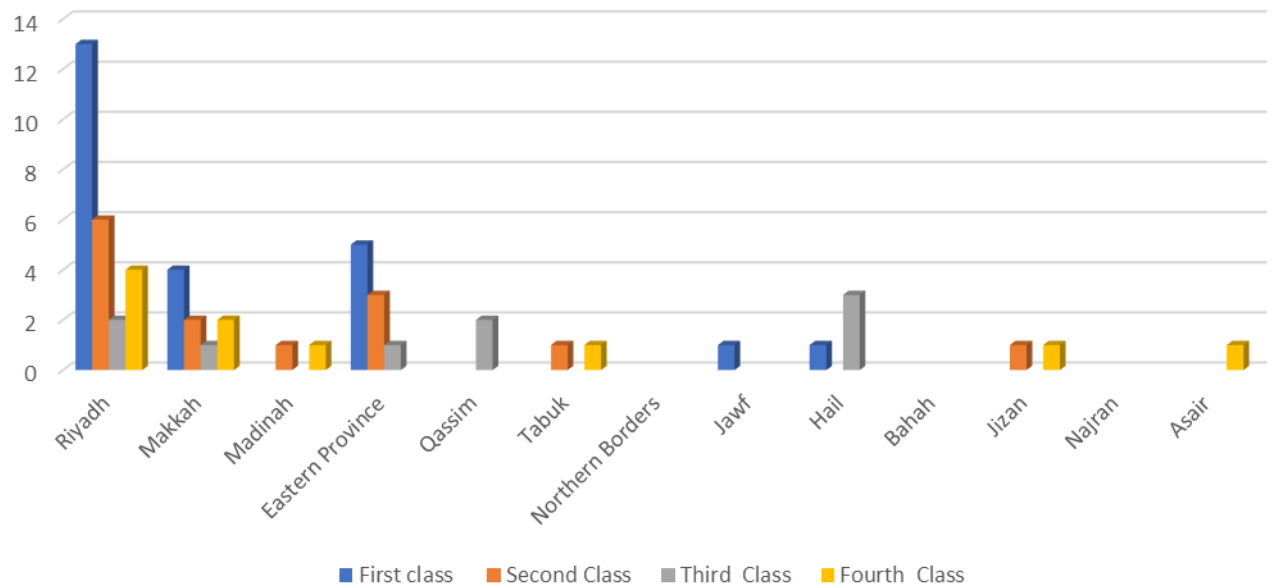


Figure 5-4 Distribution of qualified real-estate developers in Saudi Arabia Regions.

Thus, from the above figure, it can be anticipated that the capabilities of the identified real estate developer partners within the PPP housing schemes, and the distribution of those different real estate partners in different regions of Saudi Arabia, can be considered as challenges facing the current implementation of the PPP housing scheme, as the number of strong, capable first-class real estate developers is limited; this could also lead to short supply of PPP housing units. The following section will discuss the adopted PPP structure within the PPP housing scheme.

5.2.3 PPP STRUCTURE

The PPP structure helps to identify the partners in PPP housing schemes, and clarifies the role, relationships and collaboration among the different actors of the current implementation. Figure 5-5, illustrates the PPP housing structure in Saudi Arabia. The stakeholders involved in the partnership can be identified as follows.

- **Ministry of Housing:** this ministry works as a regulator of PPP housing schemes, provides incentives for the private sector, and has established a project company, namely the National Saudi Housing Company, which is responsible for contracts with real estate private developers and the supervision of different stakeholders.
- **Lenders:** which are the commercial banks, who are the financiers of the project and fund it from beneficiary loans.
- **Real Estate Developers:** design, building, and marketing of the project.

- Beneficiaries: the eligible candidates of Ministry of Housing through the Esskani program, who receive the loan from the Lender, while the Ministry of Housing pays the interest fee up to 500,000 SR (from the same bank that is the project financier).
- Etihad Almolak (Landlord union): this program aims to regulate the relationship between owners and occupants in the joint ownership of housing units through the development of rules and regulations and control mechanisms for property, and facilitates management services.
- Wafi (off-plan): this is a program implemented by the Ministry of Housing to sell housing units from the developer at an earlier stage, after the design or during construction, and the Ministry of Housing serves as the guarantor to ensure that the final housing units comply with the agreement at the early stage.

Thus, the PPP structure identifies the role of different actors within the PPP housing schemes. However, within the PPP structure, there is evidence of the lack of third sector organizations' roles with PPP housing provisions in the study area. These parties are clearly absent from the PPP structure, where their role has a significant impact on middle income households' access to PPP housing units, and they also play a vital role as moderators between the public and the private sector and are considered as a factor for the success of PPP housing schemes.

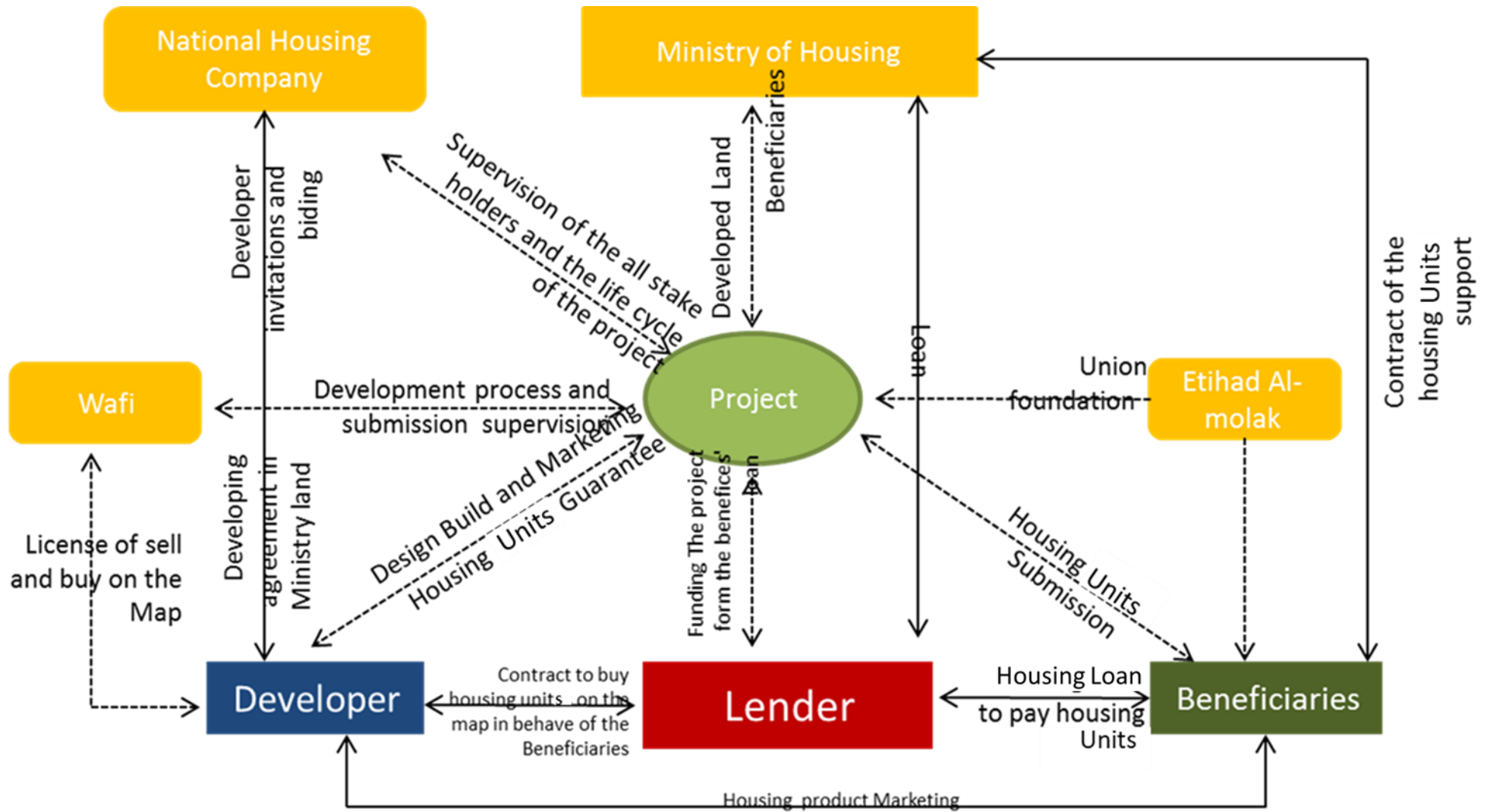


Figure 5-5 PPP Housing Structure

5.2.4 PPP Housing projects

In 2019, the Ministry of Housing announced that 46 PPP projects had already started in different regions of the kingdom to develop more than 82 thousand housing units. However, statistics in section 3.3.2 show that the demand for housing in Saudi Arabia means that 1.25 million housing units need to be developed by 2020, with an approximate need for 250,000 housing units annually. The Ministry of Housing has announced that the target is to achieve 85.6% of the total demand by 2020. Figure 5-6, below, represents the actual demand from the different Saudi regions in comparison with planned PPP housing units.

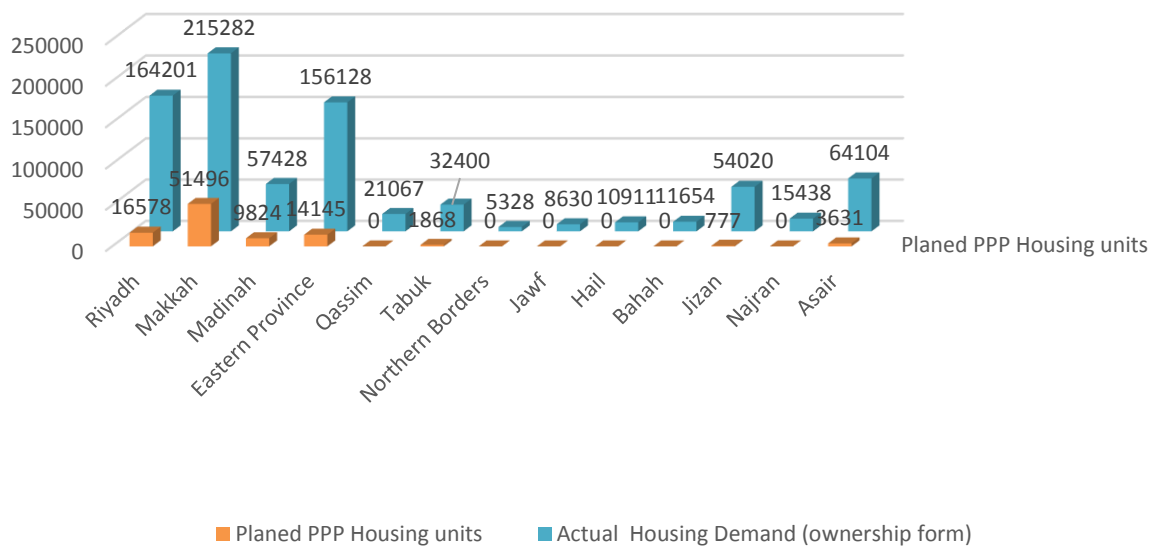


Figure 5-6 Planned PPP housing units in different regions of Saudi Arabia (Author, based on Eskan, 2019).

Figure 5-6 clearly shows that there is a significant shortage in the supply of housing in all Saudi regions. The majority of PPP housing units will be built in three main regions: Riyadh, Makkah, and Eastern Province. The lowest proportion of planned PPP housing units will be for the Tabuk, Jizan, and Asair regions. In addition, the report does not reflect any PPP projects in the following regions: Qassim, Northern Borders, Jawf, Hail, Bahah and Najran. Furthermore, the development of PPP housing projects is in the early stages of construction: Figure 5-7, below, shows the earlier stage of implementation of the different PPP project within different regions in Saudi Arabia as published by the SKANI report in March 2019.

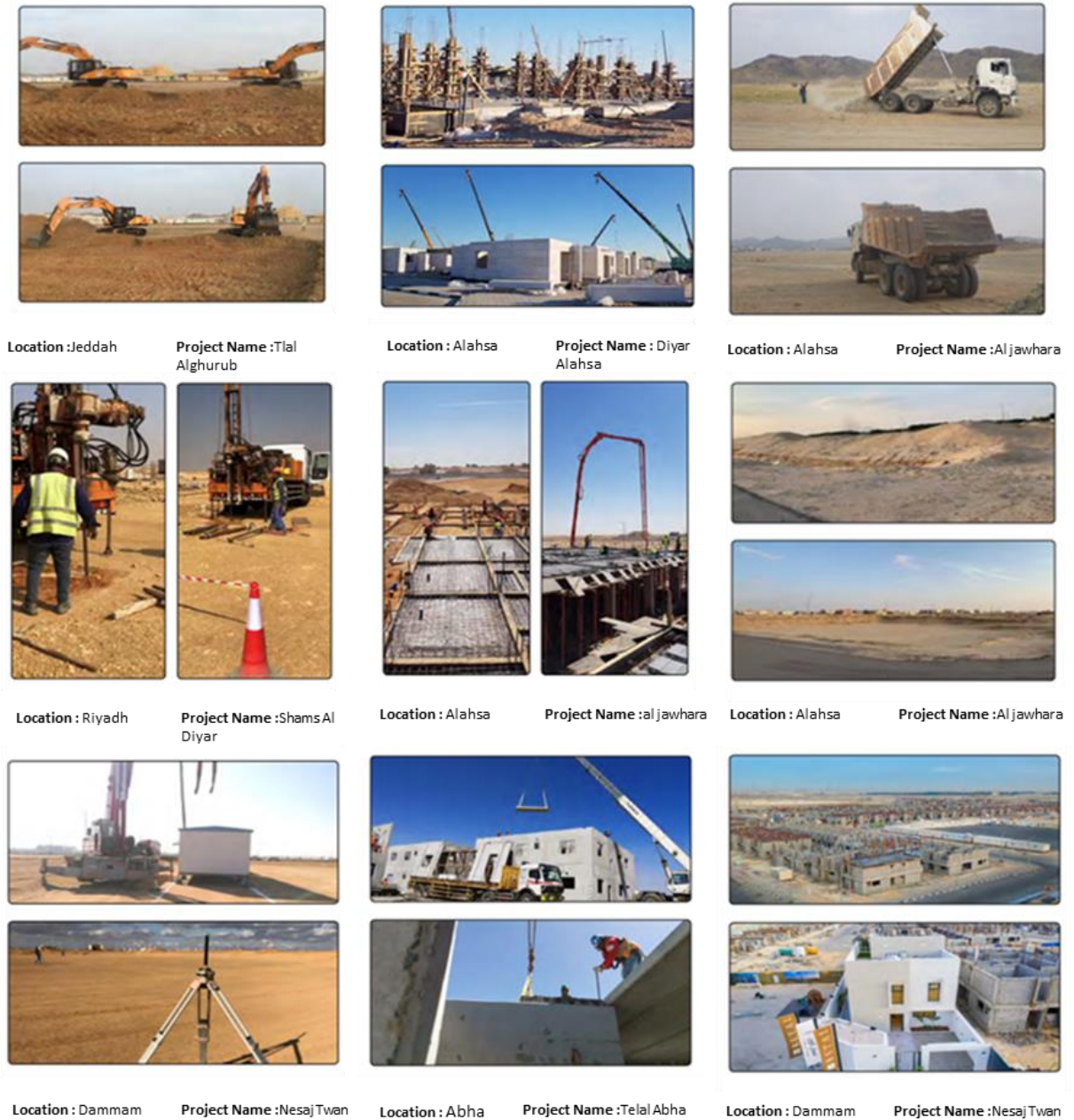


Figure 5-7 Current situation of PPP project within the different regions of Saudi Arabia (Sakani, 2019).

Therefore, it can be anticipated the scale of the PPP housing units' contribution to the demand of 2020 is limited in Saudi Arabia and the implementation of the PPP housing project is still at an early stage. The following section will present the main finding of the documentation review.

5.2.5 Main Findings of Document Analysis

The following are the findings from the documents analysed.

- The Ministry of Housing established the National Housing Company, which acts as an operational arm to implement PPP in the housing sector and helps to transfer the role of the ministry from a direct provider to an enabler and monitor.
- In order to ensure the success of PPP in the housing sector, the Ministry of Housing has established incentives for the private partners through various programs, starting with the implementation of the PPP, Wafi or on-map sale program (off-plan), Etmam (licensing and approval for housing development), the White Land program (to apply fees to residential vacant land), ownership forms and a developmental housing program.
- The Wafi (off-plan or ‘sell on the map’) program is primarily utilized for the implementation of PPP where the end user purchases the property before it is built and the PPP housing project is funded from the beneficiaries’ loans, leading to trust issues.
- Lack of integration and coordination between the different public agencies, delay, communication issues, bureaucracy, and lack of commitment to streamline the approval process to ensure the success of the PPP housing scheme are all indicated from the licensing and approval process for the housing development, which takes up to 730 days, compared with the international benchmark, which does not exceed 26 days.
- Beneficiaries’ access to the PPP housing program through the ownership forms determines the affordability and the relative need for housing for different households. In addition, it represents the beneficiaries’ journey for the PPP housing units, which indicates that beneficiaries make reservations for the PPP housing units before approval of their bankability, which may lead to demand uncertainty for the PPP housing project and risk to the private partner where PPP projects are funded from the beneficiaries’ loans.
- Real estate developer capabilities and the absence of strong real estate developers create a challenge facing the PPP housing scheme, as the first-class real estate developer are identified and limited to three main regions in Saudi Arabia. In some regions, no qualified real estate developers have yet been identified.
- There is a lack of third sector organizations’ roles with PPP housing in Saudi Arabia where the PPP structure identifies the role of different actors within the PPP housing schemes.
- The scale of the PPP housing units’ contribution to the demand is limited in Saudi Arabia and the implementation of the PPP projects is still at an early stage.

The findings from this document review can be used to reflect the current practice for the implementation of PPP in the delivery of affordable housing for middle income people in Saudi Arabia and represent the challenge that PPP housing schemes face. These findings align with the finding from the literature and reflect the three main themes – Actors, Network, and Project – that were adopted in the conceptual framework. In order to reach a deeper understanding of the current practice and the identified challenges, the following section will present an analysis of the findings from the semi-structured interviews, which were utilized as a second method for qualitative data collection within this research.

5.3 Interview Data Collection and Analysis

To keep in line with the exploratory nature of this research, and as previously mentioned in Chapter 4, the second qualitative method comprised semi-structured interviews. To further explore the challenge facing the implementation of PPP for the delivery of affordable housing for middle income people in Saudi Arabia and to build upon the data collected from the document review, semi-structured interviews were conducted with different stakeholders of the Saudi PPP housing scheme from both the public and the private sector.

These interviews with public and private partners of the Saudi PPP housing scheme were conducted face-to-face. After gaining participants' permission, the interviews were recorded using two applications: a mono digital voice recorder and an application called Smart Voice Recorder, which was downloaded to the researcher's mobile phone. All the interviews were recorded in Arabic, and then translated to English.

Each interview started with a brief presentation about the research aim and objective and general views about the research question. The average time of the presentation and the interview for all interviewees was 90 minutes. Interviews were carried out between August and October 2018. Interviews with officials from the public sector took place at the PPP unit at the Ministry of Housing in Riyadh, Saudi Arabia. The locations for interviews with private real estate developers were based on their different locations. The following subsection will discuss the interview questions, interviewee profile, thematic analysis, and interview findings.

5.3.1 Interview Questions

The questions' design was based on the conceptual framework adapted from the literature in section 2.8 which reflects the components of the conceptual framework and its three main themes namely Actors, Network, and Project. In entirety, there are four sections within the interview questions as follows.

- Section I – Profile of participants

This section started with general questions, which aim to reflect the general information on the participant and their current organization. In this section, the researcher noted the interviewee's name, education, qualifications and background, job title, number of years working in current organization, experience with PPP and real estate development, as well as the date and venue of the interview for record purposes.

- Section II –Actors of the PPP in Saudi Housing sector (Theme 1)

In this section, the participants were asked a series of questions to identify the main actors of the Saudi PPP housing scheme and the enabling environment and the government incentives provided for the private real estate developers, and the government guarantees. This section primarily sought to determine the roles of the different stakeholders within the PPP housing scheme and associated challenges.

- Section III – Network between different actors (Theme 2)

This section aimed to investigate the network between the different stakeholders with regard to current practices. In this section, the participant was asked to reflect their opinions of the relationship between different stakeholders from their experience in order to understand the obstacles to interaction in network between different partners in the Saudi PPP housing schemes.

- Section IV – PPP Housing project (Theme 3)

Section IV of the interview schedule sought to identify the challenges facing the PPP housing project. Participants were also asked to describe the PPP housing project's affordability and access for middle income people, the scale and replicability of the project, and to identify the risk associated with the implementation of this project.

The following section will discuss the interview profiles of the respondents who participated in this study.

5.3.2 Interviewees' Profile

Respondents were selected based on their knowledge, experience and involvement in the implementation of PPP in housing schemes in Saudi Arabia. Semi-structured interviews were conducted face to face with partners from the PPP units of Saudi housing schemes from both public and private sectors. In addition, from the public sector, seven interviews were conducted with interviewees from the PPP housing unit within the Ministry of Housing, each of whom had his own role within PPP Housing schemes. A further seven interviews were conducted with private sector real estate developer respondents who were identified by PPP housing units as partners within PPP housing schemes. Table 5-2, below, provides an overview of the information on interviewees participating in this research.

Table 5-2 Interviewees' Information

Participant Code	Position	Expertise	Level of Education	Years of Experience		Sector	Number of (PPP) Housing units
				In Housing	In PPP		
P.1	Project Director	Information Technology	Master's degree	7 Years	2 Years	Private (Real Estate Development Company)	600 units
P.2	Project Director	Building Technology	Master's degree	13 Years	2 Years	Private	600 units
P.3	Developmental Coordinator	Architecture	Bachelor's degree	14 Years	2 Years	Private	800 Units
P.4	Selling Manager	Business Administration	Bachelor's degree	15 Years	2 Years	Private	728 Units
P.5	Executive Director	Architecture	PhD	27 Years	2 Years	Private	300 Units
P.6	Executive Director	Executive Director	Master's degree	15 Years	2 Years	Private	1000 Units
P.7	Selling Manager	Finance	Bachelor's degree	5 Years	1 Years	Private	1000 Units
P.8	PPP Relationship Manager	Business Administration	Master's degree	1 Year	1 Year	Public (PPP unit)	----- -
P.9	PPP Relationship Senior Manager	Business Administration	Master's degree	8 Years	2 Years	Public (PPP Unit)	----- -
P.10	PPP Relationship Manager	Urban Planning	Bachelor's degree	3 Years	2 Years	Public (PPP Unit)	----- -
P.11	PPP Relationship Manager	Urban Planning	Master's degree	3 Years	2 Years	Public (PPP Unit)	----- -
P.12	Manager of Planning and Performance Department	Business Administration	Master's degree	13 Years	2 Years	Public (PPP Unit)	----- -
P.13	PPP Relationship Manager	Finance	Bachelor's degree	15 Years	2 Year	Public (PPP Unit)	----- -
P.14	PPP Relationship Manager	Landscape Architecture	Bachelor's degree	1 Years	1 Year	Public (PPP Unit)	----- -

As evident from Table 5-2, average experience within PPP ranged from one to two years. This can be attributed to the recent nature of PPP implementation in Saudi Arabia. Furthermore, the target population for the interviews comprised individuals from top management who were involved in

decision-making within the PPP housing scheme within KSA, as evident in Table 5-1. These respondents included chairmen/CEOs as stakeholders from the real estate development companies and senior managers, as well as relationship managers from the PPP unit within the Ministry of Housing. The following section will discuss how responses from this section were analysed.

5.3.3 Thematic Analysis

In this research, the data obtained from the semi-structured interviews were analysed using thematic analysis. According to Grbich (2012, p. 261) "themes have variously been referred to as: groupings; outcomes of coding/conceptualising; abstract constructs; and analytic patterns". In addition, a theme captures something important about the data in relation to the research question and represents some level of patterned response or meaning within the data set (Buran and Clarke, 2006). Thus, thematic analysis has been adopted to allow the researcher to access and analyse the perspectives articulated by different interview participants so that they can be integrated into a pattern that seeks to explain and answer the research questions and objectives and understand the research subject.

In this analysis, the researcher followed the six steps suggested by Braun and Clarke (2006):

- Familiarising the data: within this initial stage, the researcher transcribed the data, read and reread the transcripts and highlighted the initial ideas.
- Generalising the initial coding: within this stage, the researcher coded interesting features of the data in a systematic approach through the entire data set, grouping the data relevant to each code.
- Searching for themes: within this stage, the researcher gathered all the codes that are related to potential themes.
- Reviewing theme: at this stage, themes were reviewed to confirm whether they worked in relation to the coded extracts and the entire data set.
- Defining and naming themes: the researcher at this stage refined the details of each theme and the overall pattern within themes and generated a clear definition and name for each theme.
- Producing the report: at this stage, the researcher reported the analysis through the selection of vivid, compelling extract examples, undertook a final analysis of the selected extracts, and related the analysis back to the research question and literature.

To organize and simplify the process of thematic analysis, Nvivo 11 software was utilized to code the data from the interview transcripts into the nodes in the software. By utilizing Nvivo software, the researcher was able to determine the pattern that existed within the interview transcripts. The process of coding of the raw data from the interview transcripts into nodes and sub-nodes was based on the researcher's interpretation, where the codes were identified and recognised as potential new or existing themes. Nvivo 11 records data movements and coding patterns, and enables mapping of conceptual categories and thought progression; it renders all stages of the analytical process traceable and transparent, facilitating the production of a detailed and comprehensive audit trail. Figure 5-8 shows screenshots that illustrate Nvivo 11, showing the nodes and thematic analysis.

Nodes		
Name	Sources	References
Actors	0	0
Beneficiaries	11	11
Financial Institutions	12	14
National Housing Company	11	17
Real Estate Developers	13	15
Role of the Charity Foundati	7	8
Network	0	0
Communication Issue	4	8
Inadequate integration and	7	11
Inadequate sharing of decisi	13	27
lack of commitment and coll	6	9
Misinformation	11	14
Trust issues	14	41
Project	0	0
Cost and Access to Finance	8	26
Demand Uncertainty	6	12
Inadequate Beneficiaries	4	9
Incorrect target segment	5	8
Lack of Awareness	12	22
Many Options	7	19
PPP Model (off site)	7	11
Risk allocation	9	17
Scale and Replicability	14	40
Time Frame	5	9

Figure 5-8 Screenshot for thematic analysis in Nvivo 11

The process involved the researcher examining each interview transcript to see whether it fitted any patterns that fit to a node, and then locating it under the respective node and sub-node. This process was carried out in a consistent manner, and similar relevant texts from other respondents

were examined, coded and gathered under existing or new nodes until the subject crystallised to address the research objectives. The following section will describe the findings from the interviews conducted and the thematic analysis employed.

5.3.4 Interview Findings

This section describes the main findings from the interviews conducted with participants from both the public and the private sector within the Saudi PPP housing scheme. The following themes, identified through thematic analysis, form the structure of this section. There are three main themes: Actor, Network, and Project. The following sub-section will describe Actors as first identified theme in this study.

5.3.4.1 Actors

One of the fundamental motivations for adopting PPP and shifting the government role from that of a direct provider to an enabler is to engage in participation with the housing market actors to overcome the challenge of affordable housing. This theme seeks to identify the actors of the PPP housing schemes in Saudi Arabia and identify their roles within the implementation of PPP in the Saudi housing scheme, which has a direct influence on the success of PPP implementation for the delivery of affordable housing for middle-income people. Figure 5-9, below, illustrates the actors in the PPP housing schemes as identified by the study participants, which will be discussed in the following section. These actors are the National Housing Company - Project Company (which works at arm’s length for the Ministry of Housing), Financial institutions, Beneficiaries, Real Estate Developers, and Charity foundations.

Name	Files	Referenc
Actors	0	0
National Housing Company	11	17
Real Estate Developers	13	15
Financial Institutions	12	14
Beneficiaries	11	11
Role of the Charity Foundations	7	8
Developmental Housing Program	10	12

Figure 5-9 Identifying the actors of the Saudi PPP housing scheme

A. National Housing Company

The Saudi Ministry of Housing established the National Housing Company as a project company for housing development (to act as an operation arm or arm's-length actor for the partnership implementation and participation with the various actors within the PPP housing schemes). Respondent 2 mentioned that the main actor within PPP is SHARAKAT (PPP Unit), which acts and represents the National Housing Company and the Ministry of Housing in the implementation of the partnership. In addition, respondent P7 mentioned that within the partnership, the National Housing Company acts between the private real estate developers and the Ministry of Housing. Also, respondent P5, from the public sector, stated that *“The National Housing Company’s role is to manage and monitor this partnership with different stakeholders – between the real estate developer and beneficiaries, and between the beneficiaries and banks or financing institutions”* (P5).

Expertise within the actors of the PPP housing unit was identified by several interviewees as a challenge facing the implementation of PPP. Respondents P1, P2, P5, P6, P9, P10, and P14 all emphasised that the implementation of PPP in the housing sector in Saudi Arabia is still at an early stage and there is a lack of expertise on the implementation of the PPP housing schemes in Saudi. For example, respondent P6 stated that *“the actors from the PPP housing unit are good but they have never been in that situation.....I provide the relationship manager from the PPP unit with information to learn from me, and other real estate partners provide him with other information to teach him until he becomes an expert”* (P6). In agreement with respondent P6, respondent P3 asserted that the implementation is the hardest part: *“everything written is good, but human capital is more important”* (P3). In addition, respondent P2 has the same attitude regarding the lack of expertise in the PPP housing units, stating that *“they still work based on trial and error”*.

Moreover, part of the role of the National Housing Company is to define and implement the incentives and regulations for the partnership with different actors, which will be discussed in the following section.

I. Incentives

To gain the enrolment of the private sector in the delivery of affordable housing through the PPP, the National Housing Company provides incentives and creates an enabling environment, which can be considered as vital for private sector engagement. Respondent P10, from the public sector, mentioned that the Ministry of Housing through the National Housing Company provides appropriate incentives for PPP partners so that there is *“no excuse for the investor of real estate to*

not become a partner in PPP housing schemes” (P10). Furthermore, the private real estate developer could achieve and build more housing with the provided incentives. Respondent P4, from the private sector, stated that:

For the real estate developer, the partnership provides us with incentives and support. If you come and see how much we could build as real estate developers on our pipeline to the market annually, it is not equivalent to what we do with the PPP. Within seven years in our company, we have built around 3,000 housing units in one project; now, with the partnership, we build 728 housing units within one partnership project – this is almost 25% of what we have done since we established and started our company.
(P4).

However, these incentives are provided based on the guarantees from the private sector, and the eligibility to gain those incentives is determined on a case-by-case basis. Respondent P13, from the public sector, emphasised that the PPP incentives are provided to increase the efficiency of the real estate developer, but on the other hand, the real estate developer should provide guarantees to obtain them. In addition, respondent P14, from the public sector, emphasised that the provision of the incentives is based on the different PPP housing projects and on how many such projects are going to receive and the accomplishment percentage. So, the incentives are provided on a case-by-case basis.

Furthermore, the respondents in this study identified PPP housing incentives as follows: Funding, ETMAM (licensing), flexibility in design requirement, government guarantees, marketing, and public land, as illustrated in Figure 5-10. Each of these incentives will be discussed below.

Incentives	0	0
Financial Incentives	12	19
Etmam (Licensing)	7	8
Flexibility in design requirement	3	3
Government Guarantees	10	14
Marketing	5	5
Provide Public Land	6	6

Figure 5-10 incentives for the PPP housing schemes

The Ministry of Housing builds the PPP housing schemes based on sales on the map (off-plan model) to provide funds for the PPP project. Respondent P9, from the public sector, stated that “sale on the map helps real estate developers to finance the housing project from the beneficiary's

loan. This did not exist before and this is something the Ministry of Housing has established within the last two years by attracting commercial banking and finance institutions” (P9). See section 5.2.1.1.

Furthermore, as another financial incentive for the real estate developers within the PPP housing scheme, the government provides an interest-free loan as a down-payment with 20% of the total cost of the PPP housing project. All respondents from both private and public sectors agree that the financial incentives within the PPP housing schemes are suitable. For example, respondent P4, from the private sector, stated that *“the National Housing Company provides the real estate developers with 20% of the total selling cost of the development project as a down-payment, and this is an appropriate incentive. For example, if the project cost you 80 million and you sell it for 100 million, the government will pay you 20 million as an incentive as a down-payment – this is so great” (P4).*

However, the mechanism for obtaining this financial incentive is a challenge: respondents P2, P6, and P7 from the private sector agreed that receiving 20% of the total cost of the project is another obstacle that private sector face. Respondent P7 stressed that financial incentives are great but there is a problem with the mechanism of receiving them, as the requirement to receive a 20% loan as a down-payment is complicated and it is not through an effective mechanism. In agreement with respondent P7, respondent P6 stated that *“The devil is in the detail. It is not clear how we can receive this incentive – they ask private developers to provide financial guarantees from the banks for the land in order to receive the 20% and this is impossible to get from the bank. Any government project dealing with commercial banks is a no-go: no bank is going to provide this. So, we are still negotiating this” (P6).*

Furthermore, the second incentive provided by the Ministry of Housing for the PPP real estate developers is the ETMAM centre, which helps to facilitate faster licensing of real estate development (section 5.2.1.2). Respondents P1, P3, P5, and P7 from the private sector and respondents P9 and P13 from the public sector identified ETMAM as one of the incentives of the PPP housing schemes. Respondent P9 stated that:

The establishment of ETMAM helps the private developers and enables them, with different government-related agencies, to get the licensing and approval for the housing development. It used to take years for developers to receive the licensing for the development and it had to go through different stages and through many different government agencies. Within ETMAM, connections created with different government

agencies that are related to housing development make it possible to issue the license within 90 days at most. (P9).

Moreover, within the ETMAM centre, the real estate developer can gain flexibility on the design requirements for the PPP project, which is considered as a further incentive: this was emphasised by respondents P3, P5, P9, and P11. Respondent P3 stated:

...there is great facilitation within the design aspect: for example, today there are townhouses, which did not exist and were not allowed before. There is also flexibility with the Ministry of Municipal and Rural Affairs and facilitation with the building set back and building heights and floor area ratio. These are the initial incentives that the Ministry of Housing provides for real estate developers in the initial stage within the design aspects and that will help to increase the number of housing units – now, instead of building one housing unit (villa) within 500 square metres, a real estate developer can build up to four villas within the same plot of land. (P3).

Government guarantees are essential to attract private sector engagement in PPP housing schemes. Within the Saudi PPP Housing scheme, government guarantees represent another incentive provided by the Ministry of Housing to reduce the risk of investment in the affordable housing sector and enable the real estate private partners within the PPP housing schemes. Respondent P1 emphasised that within the partnership, the Ministry of Housing provides the real estate developers with new guarantees which help to reduce the risk. Respondents P2, P3, P6, P10, P11, and P13 emphasised a further incentive: the government will pay the private developer for unsold housing units with an off-taking agreement, which is appropriate motivation. However, respondents P5 and P7, from the private sector, emphasised that the implementation of the government guarantees within the PPP housing scheme is not yet clear.

Additionally, within the Ministry of Housing PPP scheme, the real estate developers are marketing the PPP project through the Ministry of Housing beneficiaries list. Respondents P7 and P10 emphasised that the Ministry of Housing provides these developers with data on housing beneficiaries, who are considered clients for the PPP housing project. Also, respondent P3 from the private sector added that *“they help us in marketing with huge marketing campaigns, and this is a very strong incentive”* (P7). In addition, through the marketing of PPP projects, the real estate developers can create their branding: respondent P4, from the private sector, said, *“we will create the branding of our company with the partnership, which will help to shape the future of our*

business within the real estate development sector and the profile of the company, with a huge number of good quality housing units in a short time” (P4).

The provision of public land at subsidised cost is one of the incentives provided by the Ministry of Housing within the PPP housing schemes. In order to gain affordable housing units, the government provides access to land at subsidised cost as an incentive for real estate developers to produce affordable housing units. Respondents P2, P4, P7, and P13 all agreed that the provision of developed public land for PPP projects is an appropriate incentive for real estate developers. For example, Respondent P4 stated that *“the public land that the government provides for the PPP project with infrastructure development is a great incentive that we have through the PPP housing schemes: it can be considered as removing 40% of the work that we did, which is a high incentive”* (P4). In contrast, respondent P5, from the private sector, emphasised that public land is not an appropriate incentive because of the financial guarantees that the government asks for before the project starts. Respondent P6, also from the private sector, added that private real estate developers must pay for the public land at the end of the project.

Hence, the incentives that are provided by the Ministry of Housing through the National Housing Company help to create an enabling environment for the private sector to step in and shape the PPP housing scheme. However, some respondents from the private sector identified an obstacle in the mechanism to obtain financial incentives, with an unclear procedure to gain the government’s guarantees. The following section will discuss the findings regarding the interviewees’ perspectives on the legal framework for the PPP housing scheme implemented by the National Housing Company.

II. Unstable Legal Framework

The government is expected to provide a stable legal framework for the implementation of PPP in the housing sector, which will help to ensure strong private sector participation in PPP for the delivery of affordable housing. However, all the respondents from the private sector emphasised that the legal framework for PPP implementation in the delivery of housing is not stable and is updated frequently. For example, Respondent P5 emphasised that the updating of the legal framework occurred on a weekly basis: *“In terms of the regulations or the legal framework within the PPP, this is developing on a weekly basis. If we start with them as a developer this week, next week they will adjust something or add something else”* (P5).

Furthermore, respondents P8, P9, P10, P11 and P14, from the public sector, agreed that the legal framework for Saudi PPP housing schemes has not been finalized. The reason for that was

explained by respondents P8 and P14 from the public sector, who pointed out that every project is different. Respondent P8 stated that *“it is changeable – every day we change something to avoid an obstacle with a new real estate developer or new partner, so I cannot say that you can come to me and I can explain the whole framework from A to Z, no, because every project is different, so we have to adjust some of the agreement based on individual projects”* (P8).

Another reason for the unstable legal framework is because the implementation of PPP in the housing sector is still in its initial stage, as emphasised by respondents P1, P2, P5, and P6 from the private sector and respondents P9, P11, and P14 from the public sector. For example, respondent 14 stated that *“The PPP housing schemes only started a year and a half ago, and I think that is very normal ...the regulations are still not stable: I think this is a challenge that we face within our partnership. What we need here is the time factor – just time – as we are still building this partnership”* (P14). Thus, from these responses, it is clear that the unstable framework is a challenge to the implementation of PPP in the housing scheme. The following section will explain the second identified actors within the PPP housing sector.

B. Real estate developers

The second partner within the PPP housing schemes is the real estate developers, as the aim of the partnership is to work closely and create a link with the market actor to provide more affordable housing and address the Saudi housing challenge. Respondent P9, from the public sector, emphasised the difference between contractors and real estate developers: *“Our partners are the real estate developers, who start from the initial study of people’s needs, to the level of design, to marketing and selling, and to construction, whereas the contractor is just involved in the construction of housing”* (P9). Respondent P10 added that the real estate developer has his own stakeholders to deal with, from contractors to marketing, implementation, and building technology companies: the real estate developer takes the burden from beginning to end.

Furthermore, the capabilities of the real estate developer within the PPP housing scheme were identified as a challenge faced by PPP units. As mentioned earlier, the PPP unit has certain criteria to identify the real estate partner (section 5.2.2). However, respondent P9, from the public sector, mentioned that strong real estate developers do not yet exist within the PPP housing schemes. In agreement with respondent P9, respondents P12 and P10 added that the real estate developers are not yet ready to participate in mega-projects with thousands of housing units. Respondent P10 said *“The PPP unit proposed high numbers of housing project that are not within the capability of the private sector”* (P10).

Moreover, lack of participation from other real estate developers was mentioned. Respondent P10, from the public sector, said, *“there are a few real estate developers who work as prime movers to participate with us within our PPP housing schemes while the others wait for our partners’ experience”*. In the same context, respondent P14 added that there are real estate developers on the market that are not involved in the partnership with the Ministry of Housing and have no interest in it. In addition, respondent P1 said, *“we need more participation from real estate developers: the numbers or scales are too small”* (P1).

Therefore, for real estate developers as identified actors for the PPP housing schemes, there are two main challenges: lack of participation of particularly able, experienced real estate developers, and real estate developers’ capability to participate in mega PPP housing projects. The following section will discuss the role of the financial institutions and the challenge facing the PPP housing schemes within this role.

C. Financial institutions

The financial institutions’ role is critical to the implementation of PPP in funding the beneficiaries and housing projects. Traditionally, the beneficiaries of the Ministry of Housing were financed from the government through the Real Estate Development Fund (section 3.4.1). Within the implementation of PPP in the housing schemes in Saudi Arabia, this role has been shifting to commercial banking. However, the participation of financial institutions was identified as a challenge of the PPP housing schemes, as explained by respondent P3 from the private sector:

“The banks are not involved and are reluctant to finance the beneficiaries within the PPP housing schemes. Even with the guarantees and policies of the Ministry of Housing, their participation is limited. The financial institutions and commercial banking can be recognized as a weak link within the PPP housing schemes...the banks are not involved and are hesitant.” (P3)

Furthermore, in agreement with respondent P3, respondent P5 stated that *“In order for the PPP schemes to work more effectively, the partnership with the bank or the financiers is very important. It needs to be reconsidered, with numerous details that both parties need to work on”* (P5). In addition, respondent P6, from the private sector, stressed that *“the greatest challenge that we face within the PPP is the finance challenge...there are huge numbers of people who are eligible and ready to take the loans, but the commercial banks are not yet ready. Of all the kingdom’s commercial banks, only one bank and one financial company have started to provide loans for*

PPP project beneficiaries” (P6). Respondent P10 added that “...everybody wants the other to try the partnership first. For example, we have twelve commercial banks in Saudi Arabia, but only four or five of the partners of those banks are willing to get involved and have shown interest in the partnership” (P10).

Moreover, respondent P12 commented on the reason for the lack of participation of financial institutions in the PPP housing scheme in Saudi Arabia: *“Maybe they see a high risk with involvement in the PPP housing schemes, or they see that our model is not yet completed or they are not ready to finance a huge number of beneficiaries” (P 12).* Furthermore, respondent P9 added that *“the banks in Saudi Arabia provide real estate loans only for existing units or property, but within the new adoption of selling on the map, they provide loans for housing units that don’t yet exist but will be built within two or three years” (P9).* Thus, financial institutions’ lack of participation in the PPP housing schemes is a challenge faced by the current PPP implementation in the housing sector in Saudi Arabia. The following section will discuss the absence of the role of third sector organizations within PPP housing schemes.

D. Third Sector Organizations

The interviewees’ responses did not identify a direct role for charitable foundations within the PPP housing schemes. Respondent P4 emphasised that there is no direct link between charity foundations and third sector organization and PPP housing projects, but with every project, a certain percentage of the PPP housing units are developed for the sake of low-income people. Furthermore, respondents P1, P2, P5, P6, P8, P10, P11, P12, P13, and P14 confirmed that the role of charity foundations comes through another Ministry of Housing program, called the Developmental Housing Program, which works with charity foundations (section 5.2.1.5). For example, respondent P5 stated that, *“For the charity foundation we have developmental housing programs which aim to take care of people on low incomes and social benefits. If their monthly income does not exceed 5000 SR, they work with us, and some of our housing products built through the PPP housing project are designated for the beneficiaries of this program, which also works with charity foundations” (P5).*

Within the Saudi PPP housing scheme, there is no public participation. Respondent P5 emphasised that within the implementation of the PPP, PPP units work only with companies: there is no public participation. Also, the final beneficiaries’ role is limited within the PPP housing schemes (section 5.2.1.3): respondent P13 stated that *“the public are not involved. We act with them in the final stage as final beneficiaries” (P13).* In agreement with respondent P13, respondent P8, from the public sector, added that beneficiaries just register with the ESSKAN program and receive a

message inviting them to visit the marketing site to see the housing PPP project. In addition, respondent P14 emphasised that the Ministry of Housing is working on behalf of the final users: *“This is why we work to provide them with housing products, and we work for them: they are not partners, they are the end users, and we aim to ease their process or journey until they receive their final housing units”* (P14). Therefore, it can be anticipated that there is no role for third sector organizations, including public participation, and non-government organizations within the implementation of the PPP housing schemes, where the end users’ role and involvement are identified at the marketing stage.

Within the role of actors in the implementation of PPP in the delivery of affordable housing in Saudi Arabia, which is the first identified theme of this study, several challenges were identified as follows: unclear mechanism for receiving financial incentives, unstable legal framework, limited real estate developers’ capabilities, lack of participation by financial institutions, and absence of the role of third sector organizations from both public and charity foundations. The following figure (Figure 5-11) illustrates the first theme of actors and associated challenges. The next section will discuss the second identified theme within the study, which is Network between PPP housing stakeholders.

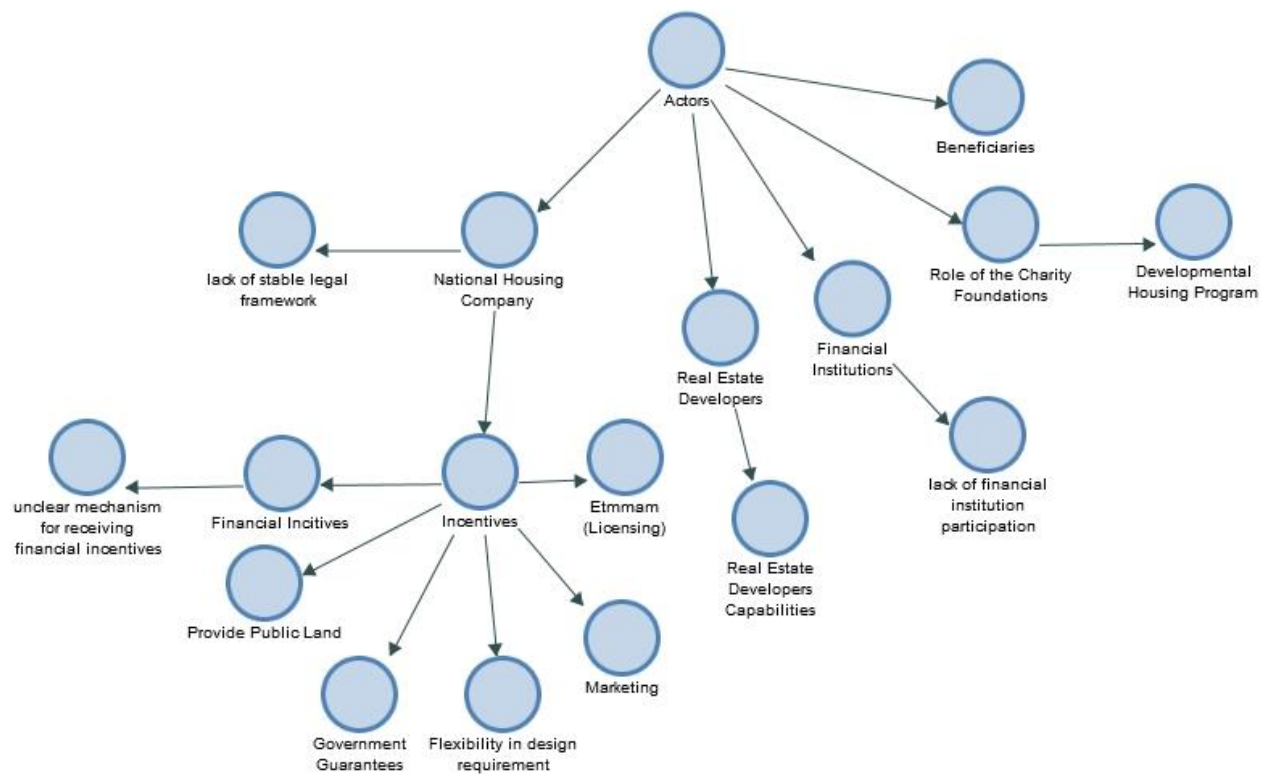


Figure 5-11 Actors and associated challenges

5.3.4.2 Network between Actors of PPP housing scheme

The network between the different stakeholders have a significant impact on the final output of the PPP housing scheme and a significant role in its success. Within the implementation of PPP for the delivery of affordable housing for middle income households in Saudi Arabia, this network forms one of the critical themes identified by the interview respondents. Participants within this study identified the following factors as challenges to the relationship between different partners within the PPP housing scheme in Saudi Arabia: The main factors challenging the network among stakeholders within the PPP scheme were cited as poor communication, lack of government integration and coordination, lack of commitment and collaboration, lack of information sharing, lack of sharing of decision making, bureaucracy and lack of trust. Figure 5-12 illustrates the network challenges within the Saudi PPP housing scheme.

Name	Files	Referenc
Network	0	0
Communication Issue	4	8
Inadequate integration and coordination	7	11
lack of commitment and collaboration	6	9
Misinformation	11	14
Bureaucratic	7	10
Inadequate sharing of decision making	13	27
Trust issues	14	41

Figure 5-12 Network challenges within the implementation of the PPP in housing scheme

A. Communication issues

Communication between different stakeholders within the PPP housing scheme is vital and is considered to be one of the critical factors that influence the output of the PPP scheme. Within the implementation of PPP in the Saudi housing scheme, the National Housing Company assigns a relationship manager for every real estate developer to facilitate communication issues between PPP partners. Respondent P3 stated that *“In the current stage it is much better that there are RM (relationship managers) who are responsible for real estate developers: they work as facilitators within the National Housing Company and act on behalf of real estate developers, and have connections with all related authorities and departments within the Ministry of Housing”* (P3).

However, respondent P2 emphasised that the efficiency of the relationship manager is another issue, depending on his experience and capability, and respondent P7 added that *“their authority is limited”*. In agreement with respondent P2, respondent P14 referred to issues with relationship managers’ ability to communicate with the various authorities and stakeholders within the PPP housing scheme and emphasised bureaucracy as a reason.

The loop of communication is a challenge that we face. For example, I ask the Real Estate Development Fund to provide a financier for a PPP project: I have no idea of what is going between them, but I just receive the service that I ask for. So now if I came and ask the financier’s institution to attend, I have to ask them through the real estate development ... it is different when I communicate with ETMAM or Etihad Almolak, so it is different if the head of the department in the Ministry of Housing communicates with them, and that can be reflected in the speed of the process, the time frame and the quality of the action that they take, with higher responsibility. This is an obstacle for us: we have problems with the intersection with different related public agencies and different departments within the housing ministry, which are not yet clear (P14).

Therefore, it can be anticipated that even with the relationship manager’s role as a communication channel for the PPP partners within the housing scheme, communication remains an issue. Another obstacle within the network is the lack of integration and coordination, which will be discussed in the following section.

B. Inadequate integration and coordination

The interview respondents reflected that there are two main issues within the integration of the PPP housing scheme. The first is the lack of integration between the various related government housing agencies within the PPP housing scheme. Respondent P2 provided an example of this obstacle: *“The integration is not established, although they try. We asked them for 600 visas for labour for PPP housing project – we got it with their support, but it took a long time. We applied around four times, and each time there were different requirements and a different path”*. Furthermore, respondent P14, from the public sector, stressed that *“with other stakeholders of public agencies, there are still challenges: for example, the Ministry of Rural Affairs, Ministry of Justice – to have licenses and planning permission, there are still challenges and obstacles.”*

The second issue with integration and coordination is the lack of integration between the PPP housing scheme and other Ministry of Housing programs. Respondent P2, from the private sector, said:

After the marketing stage, when the contract was ready to sign with beneficiaries of the PPP housing project, the Ministry of Housing offered the beneficiaries another alternative of existing housing units within the same time. As a result, our eligible client cancelled their reserved PPP housing unit". This was confirmed by respondent P14, from the public sector: "Our problem is how to integrate within the Ministry of Housing departments and programs: for example, the real estate development fund, Wafi and Etmam, the Ministry of Housing and the National Housing Company. It has improved, but it still needs more. We work alone and our goal is different from other departments and programs: it is improved, and if we shared our goals, we would come under one authority, but I can still say there are obstacles and challenges to integration with internal stakeholders of the Ministry of Housing" (P14).

Therefore, it can be anticipated that the problem of inadequate integration and coordination is not within the private real estate developers and the PPP unit; it is the problem of government agencies that are related to housing and different departments within the Ministry of Housing.

C. Lack of commitment and collaboration

The commitment between different partners is one of the factors that contribute to increasing the success of the PPP. Respondent P8, P10, and P13 from the public sector believed that commitment between different partners exists at a high level. In contrast, respondent P12, from the public sector, emphasised that some partners within the PPP housing scheme do not have commitment and withdraw from partnership: *"There is no full commitment. We do not have authority over the bank. We have some real estate developers who withdrew from the partnership – why? Not because of their risk. Maybe they have another project from the government and they preferred to quit. It happened in one or two cases"* (P12). Furthermore, respondent P2, from the private sector, emphasised that when the real estate developer reaches the stage of receiving the financial incentives (which comprise 20% of the total cost of the project as interest-free loans), they did not receive them: *"...we provide the finance for the project from the company budget, self-funded"* (P2).

Furthermore, respondents P2, P3, P5, P6, P7, P9, P11, P12, and P14 emphasised that the lack of the financial institutions' commitment and collaboration within the PPP housing schemes is a challenge facing the Saudi PPP housing scheme. For example, respondent P12, from the public sector, stressed that real estate developers sign contracts with banks to finance the beneficiaries of the PPP project, but banks do not finance them, as there are no commitments from the financial institutions. Also, respondent P11 stressed that the collaboration of the financial institutions is the

main challenge within the PPP housing schemes because the projects are financed from the beneficiaries' loans. In addition, respondent P6 said, *“now they try to avoid the problem of the banks' commitment and collaboration by providing incentives for us (private developers) because the banks are not ready yet and they are not going to be ready within weeks or months, so that's why they provide incentives to start the PPP housing projects”* (P6).

Therefore, respondents within this study reflected that commitment and collaboration have been identified as challenges within the current implementation, and that this is reflected in two aspects. The first aspect is receipt of the incentives that the Ministry of Housing provides for the real estate partners, while the second is the financial institutions' lack of commitment to finance the beneficiaries of the PPP housing project. Within the second theme of this study, “Network”, misinformation has also been identified as a challenge to the PPP housing scheme, as will be discussed in the following section.

D. Misinformation

The availability of information among the PPP stakeholders is critical to build relationships and influence the success of the PPP housing scheme. Respondents P1, P2, P3, P5, P7, P10, and P13 all agreed that the lack of information is a factor challenging the implementation of the PPP housing scheme and specifically regarding the funding and financial institutions. Respondent P5 stated that *“Real estate developers have no idea what's going on between the bank and the Ministry of Housing – they have their own ways and we have a problem with this point”* (P5). In addition, respondent P13, from the public sector, emphasised that the availability of information between different partners is inadequate, particularly regarding information on funding and financial institutions. Also, respondent P7 mentioned *“We were surprised with the agreement of the financial institutions. We had initial agreements with certain banks that finance the PPP housing project, but when we reached the finance point, we were stopped because there were other agreements between the PPP housing units or the Ministry of Housing and commercial banks. This is a challenge”* (P7).

Data accuracy is another challenge within the availability of information between different stakeholders in the Saudi PPP housing scheme. Respondents P1, P2, P3, P5, and P6 from the private sector confirmed that data accuracy is another factor that raises the issue of trust. For example, respondent P5 stated that *“The Ministry of Housing database is inaccurate in terms of the information provided about the needs for the different regions, in terms of people's abilities to buy ... It is not accurate, and therefore we cannot rely on it at all”* (P5). In agreement with respondent P5, respondent P3 confirmed this: *“Ministry of Housing data is not accurate”*.

Within the Saudi Arabian PPP Housing scheme, linking the information and the data on the Ministry of Housing beneficiaries (PPP housing project clients) to the financial institutions that are funding the PPP project is an obstacle to the implementation of the PPP housing scheme. Respondent P1 said, *“The financial institutions face problems with the Real Estate Development Fund in providing information and data regarding the beneficiaries and linking that data with financial institutions, so the beneficiary’s financial data come from the Real Estate Development Fund and are related to the monetary agency. This affects the whole PPP process”* (P1). Thus, the availability of information on PPP housing beneficiaries and the accuracy of data were identified as challenges influencing the implementation of the PPP housing scheme.

E. Bureaucracy

Within the network between different stakeholders in the PPP housing scheme in Saudi Arabia, bureaucracy is rife, and affects the sharing of decision-making. Respondent P2, from the private sector, emphasised that within the implementation of the PPP housing scheme, real estate developers act and participate with the National Housing Company, but they still work based on government bureaucracy in terms of decision-making, and the Ministry of Housing is involved at every stage. Even when dealing directly with the National Housing Company, bureaucratic obstacles still exist. Also, respondent P3, from the private sector, stressed that real estate developers will sometimes suggest things and they agree to consider these suggestions, but the time taken to make such decisions causes problems, and this is related to government bureaucracy, which still affects the National Housing Company: *“There are long and complex paths to take that decision.”* In addition, respondent P5 stated that the National Housing Company *“...still play the role of the government with the partnership. They work with the concept of the government. They still act as they if are the in right and they have the power”* (P5).

Furthermore, the government’s bureaucracy also affects the integration and coordination between National Housing Company the various related housing government agencies, as well as communication. Respondent P7 emphasised that the establishment of the Etmam program by the Ministry of Housing sought to create integration with other housing government-related agencies, but that this challenge still exists: *“This is one of the things that we work in, to help and enable the private sector through the Etmam program as a part of integration with other government agencies in order to reduce the bureaucracy, but this is still an obstacle”* (P7). Additionally, respondents P8, P11, P13, and P14 from the public sector confirmed that government bureaucracy still exists within the implementation of the PPP housing scheme in Saudi Arabia. Respondent P8 emphasised that there are bureaucratic obstacles within the partnership with the private sector.

Thus, within the network between the different stakeholders of the PPP housing scheme, government bureaucracy is rife.

F. Inadequate sharing of decision making

To achieve successful PPP, the participation of stakeholders from both the public and the private sector on decision-making is crucial. However, this has been identified as a challenge within the network. Respondent P7, from the private sector, and respondent P14, from the public sector, agreed that the participation of stakeholders within the PPP housing scheme is limited. For example, respondent P14 mentioned that the private sector participates in decision-making, but not in all decisions, particularly those related to project funding.

In addition, respondents P1 and P6 emphasised that decisions related to finance and funding of projects are not shared between PPP stakeholders. Respondent P6 said: *“So the shared decision-making is limited. PPP housing partners never meet as stakeholders around one table, especially with the financial institutions, so the Ministry of Housing sits with the financier alone and they sit with the real estate developer alone ... you need to put everyone around one table and hear from them and this is the best way to proceed to the next step”* (P6). Additionally, respondent P1 stated that *“In the middle of the funding process, we will suddenly have a new policy hindering us”* (P1).

Furthermore, all the respondents from the public sector – P8, P9, P10, P11, P12, P13, and P14 – mentioned that the PPP unit committee holds workshops on a regular basis to discuss and share the decisions with various PPP housing stakeholders. In contrast, respondent P12 stated that *“We still act as government: we make the decisions, but we are flexible. We hold workshops and adjust some decisions based on their feedback”* (P12). In addition, Respondent P6 stressed that the workshops arranged by the National Housing Company serve to achieve the KPI, but that PPP units do not share the decisions with stakeholders: *“They organize workshops because they have KPI – they need to achieve it. They organise workshops and stand up on the stage, but we should all be around a table. Second, there is no one taking notes, so you just bring me to speak out as a relief”* (P6). In agreement with respondent P6, respondent P11, from the public sector, confirmed this by mentioning that in general, the decisions come from the Ministry of Housing and the workshops are committed to taking stakeholders’ viewpoints, but *“mainly it is our decision”* (P11).

Furthermore, conflicts in decision-making between partners present another issue with the decision-making factor. For example, the National Housing Company requires temporary structure (tents) on site at the location of the project for marketing purposes, with specific requirements,

these can cost more than 1,000,000 SR, whereas the private developers suggest a showroom, which is cheaper and more appropriate for the marketing of the PPP housing unit. Respondent P2 stated that “*at the marketing stage, because of a bad decision by the National Housing Company, we (the real estate developer) paid 1.7 million for a marketing tent that was blown away by the wind, and in the end, they eventually allowed us to do marketing in the mall*”. Respondent P6, from the private sector, provided the same example to illustrate the conflict surrounding the decision to market the PPP housing project in a tent or temporary structure:

For example, at the marketing stage, they asked us to put the marketing of the project in a tent. How I can convince people who are going to buy houses that I am going to build for them as a private developer within the PPP housing schemes when I am based in a tent? It creates a poor impression, and it can fly away in the wind. I could undertake marketing in a showroom in the best hotel in the region, but not in a tent – it would be cheaper than the tent. They asked us to use a white tent, which can cost us up to 1,000,000 SR, whereas the showroom costs 60,000 SR – half the price – so now they have changed their mind and we can decide whether to do the marketing in a showroom or a tent: sometimes they listen before the action and sometimes after the action (P6).

Furthermore, the partners’ different targets lead to a lack of sharing of decisions on the PPP housing schemes. If left unmanaged, these differences in the goals of public and private stakeholders can lead to friction and absence of trust between different stakeholders. Respondent P2 stated that “*The target of the Ministry of Housing is different from our target as real estate developers: I see it as products that I developed, so the Ministry of Housing does not care about the real estate developers. They can make poor decisions, which could harm us... Our target is different from their target: real estate developers have products and they want to do marketing, but the Ministry of Housing has targets to achieve and demands to meet to accommodate all the beneficiaries on the candidate list*” (P2). Therefore, the lack of shared decision-making between different PPP stakeholders is influenced by government bureaucracy making decisions and the different targets between different stakeholders, which has been identified as a challenging factor faced in the implementation of the PPP housing scheme in Saudi Arabia which creates a lack of trust between different stakeholders. This will be discussed in the following section.

G. Trust Issues

Another challenge associated with the lack of shared decision-making is the trust issue, which is considered as a major challenge that affects the implementation of PPP for the delivery of affordable housing in Saudi Arabia and has been mentioned and confirmed by all the interviewees who participated in this study. The participants reflect the issues of trust between different stakeholders in the PPP housing scheme, as illustrated in the following Figure 5-13, affecting various actors: real estate developers, the Ministry of Housing, financial institutions, and beneficiaries (end users) of the PPP housing scheme.

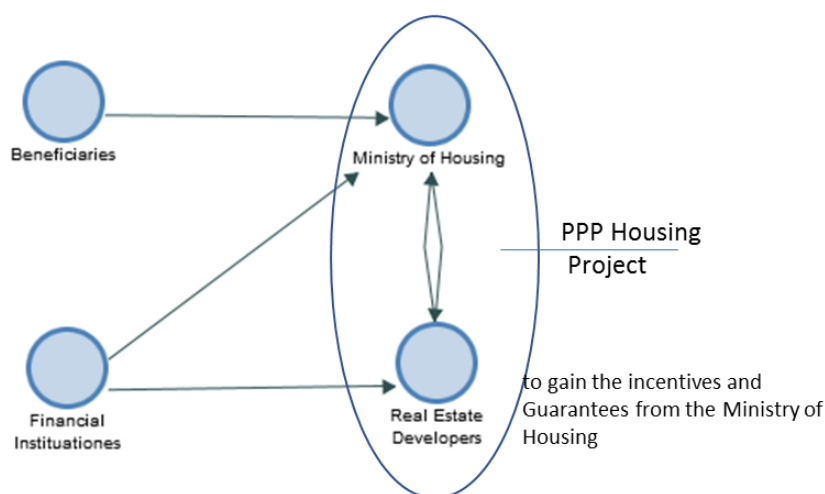


Figure 5-13The Issue of Trust between different stakeholders

From the aspect of the real estate developers, respondent P1 emphasised that trust is an issue because some decisions have been made that they were not aware of, and this has had a significant direct impact on the finance of the project and is considered as a serious concern for the real estate developers. Respondent P2 emphasised that within the PPP housing scheme, the National Housing Company started the initial implementation with a group of real estate developers: *“They try it on us so the risk is high for us – if there are any problems, real estate developers are on the front line”* (P2). In addition, the absence of a stable legal framework was identified as a further reason for mistrust: respondent P5 confirmed this: *“The real estate developers haven't touched anything concrete within the PPP schemes. What is happening is before the actual implementation in the marketing stage... trust is still oscillating between the different parties because the ministry is not solid or fixed within their legal frameworks and their regulations, and also because the level of*

demand from the beneficiaries is leaking away (demand uncertainty).” This was also confirmed by respondent P10 from the public sector.

In addition, real estate developers emphasised that they lack trust in receiving the financial incentives and government guarantees within the PPP housing project. This was mentioned by respondents P2, P5, P6, and P7 from the private sector as well as respondents P10 and P12 from the public sector. Respondent P7 emphasised that the procedure for receiving the financial incentives remains unclear. Also, respondent P6 stated that *“the devil is in the detail: it is not clear how we can get this incentive lately. They ask me to provide financial guarantees from the banks in order to receive the 20%, but this is impossible to get from the bank – any government project dealing with commercial banks is a no-go”* (P6).

Additionally, real estate developers lack trust in receiving government guarantees within the PPP housing schemes: respondents P5 from the private sector and P14 from the public sector both emphasised that. Respondent P5 stated that *“They are just written on the paper and every day they change. They haven't reached this point yet – it is just two lines on a piece of paper... It is written but we don't trust it. We are not sure if it's going to be implemented or not, if it is going to be negotiated or not. I think they haven't reached this point yet”* (P5). Thus, real estate developers have trust issues with the Ministry of Housing for several reasons: lack of shared decision-making, unstable legal framework, demand uncertainty, and lack of trust in receiving the financial incentives and government guarantees.

Moreover, there is another aspect within the lack of trust between the Ministry of Housing and real estate developers and even in the adoption of PPP. Respondent P7 stated that the Ministry of Housing does not trust that the real estate developers will achieve the ministry's quality requirements. Furthermore, respondent P14 stated that *“even to reach the degree where some colleagues in our department do not have trust in the whole PPP system, it starts with losing trust in the project and gradually reaches the whole PPP system. I say that because everything has just started, everything is new and updated: the concept of the PPP is still new, and even the department of the PPP unit is new, the selling on the map is new, and even the National Housing Company is still new”* (P14).

Moreover, the financial institutions' lack of commitment and participation were identified earlier, in section C. The reason for this lack of participation is lack of trust in the PPP housing scheme and in the key actors, namely real estate developers, the Ministry of Housing, and the National Housing Company. Respondents P11 and P13 from the public sector agreed that financial institutions do not trust the Ministry of Housing and real estate developers: they build their trust

based on individual projects. In addition, respondent P6 stated that the financing institutions do not trust the real estate developers because of limited experience in developing huge numbers of housing units, and financial institutions thus will not provide financial guarantees for PPP projects to enable the real estate developers to receive financial incentives. In addition, P5, from the private sector, mentioned that *“the problem is with the financial side: there are trust issues between the banks and the Ministry of Housing, and this is reflected by the size of loans (that are provided to) the beneficiaries. Some of the beneficiaries will be rejected”* (P5).

The final users or beneficiaries also have trust issues towards the PPP housing scheme. Respondents P3, P4, P4, P5, P6, and P7 from the private sector and P8, P10, P14 from the public sector agreed that the beneficiaries lack trust in the PPP housing project. Respondent P8 cited the transformation of the government role from a direct provider to a partnership with the private sector and commercial banks as a reason for losing trust from the end user or beneficiaries, which impacted the PPP’s ability to reach its target: *“this is the alternative for the government – to just pay for the loan interest fees for the commercial banks – so people or beneficiaries were used to the Real Estate Development Fund (explained section 3.4.1), and within that change, the trust issue arose”* (P8).

Another reason for beneficiaries’ lack of trust is the model of PPP adopted, which is based off-plan (Section 5.2.1.1). Respondent P7 stressed that the final beneficiaries do not trust that they will receive housing units after three years within the PPP housing scheme: they are not sure that the government will pay the interest fees for the commercial banks. Furthermore, another reason for the lack of trust from the beneficiaries is the delay in signing the funding agreement for the beneficiaries who reserve the PPP housing unit on the marketing stage. Respondent P6 stated: *“it takes up to two years to make agreements with commercial banks in order to finance and provide loans for Ministry of Housing beneficiaries, and because it takes so long, the beneficiaries lose trust in the Ministry. They say ‘we have waited two years for our reservation but we have not yet signed with the banks, so how do you announce as the Ministry of Housing that I am going to receive my housing unit after two years when I have not signed a finance contract with the bank?’ Thus, the beneficiaries are suspicious about the Ministry of Housing’s promises”* (P6).

The participants in this research also identified the announcement of the PPP project through the media and the lack of accurate data as two further reasons for the lack of trust between different partners in the implementation of the PPP housing scheme. Respondents P1, P2, P3, P5, and P6 from the private sector agreed that the announcement of the PPP housing project by the Ministry of Housing promised that the beneficiaries would receive their housing units within two years but

the actual real development on the ground had not yet started. Respondent P5 stated that *“All this media and announcements do not reflect the actual real world. We are not yet there”* (P5). Furthermore, the announcement of the PPP project reservation through the PPP housing scheme also raised the issue of trust: P1 stated that *“there are external private developers observing us (PPP partners) from the market, and you have already announced that your reservations on the project have reached 100%, but you only have 9% that have actually been financed and accepted by banks. That will undoubtedly affect trust and put other real estate developers off participating in PPP housing schemes”* (P1).

Thus, the trust issues between different stakeholders in the PPP housing scheme in Saudi Arabia were identified and shown to be influenced by the lack of shared decision-making between different stakeholders, clear procedures to receive financial incentives and government guarantees, project announcement (media), inaccurate data related to the financial situation of the beneficiaries, mistrust from financial institutions, delays, and the PPP model adopted (off-plan), which jeopardised the trust from the beneficiaries' side.

Therefore, within the second theme of this study (Network), a number of factors were identified. These included communication issues due to government bureaucracy and the limited authority of relationship managers within the PPP unit, and inadequate integration and coordination among different government agencies related to housing development, as well as between the different Ministry of Housing programmes; the lack of commitment and collaboration from the financial institutions and lack of commitment in providing financial incentives for the real estate developers within the PPP housing scheme; and misinformation regarding the beneficiaries' income facing the financial institutions within the PPP housing scheme. Moreover, there were bureaucratic hurdles and differing targets between different stakeholders within the PPP housing scheme, as well as inadequate sharing of decision-making between different stakeholders.

Furthermore, trust issues accrued because of several reasons, as follows: lack of commitment and collaboration from financial institutions, real estate developers' failure to receive financial incentives within the PPP housing scheme, government guarantees, unstable legal framework, project announcement (media), inaccurate data related to beneficiaries' financial situation, the PPP model adopted (off plan), delays, and inadequate sharing of decision-making. Figure 5-14, below, illustrates the network factors within the implementation of the PPP housing scheme in Saudi Arabia based on the above discussion.

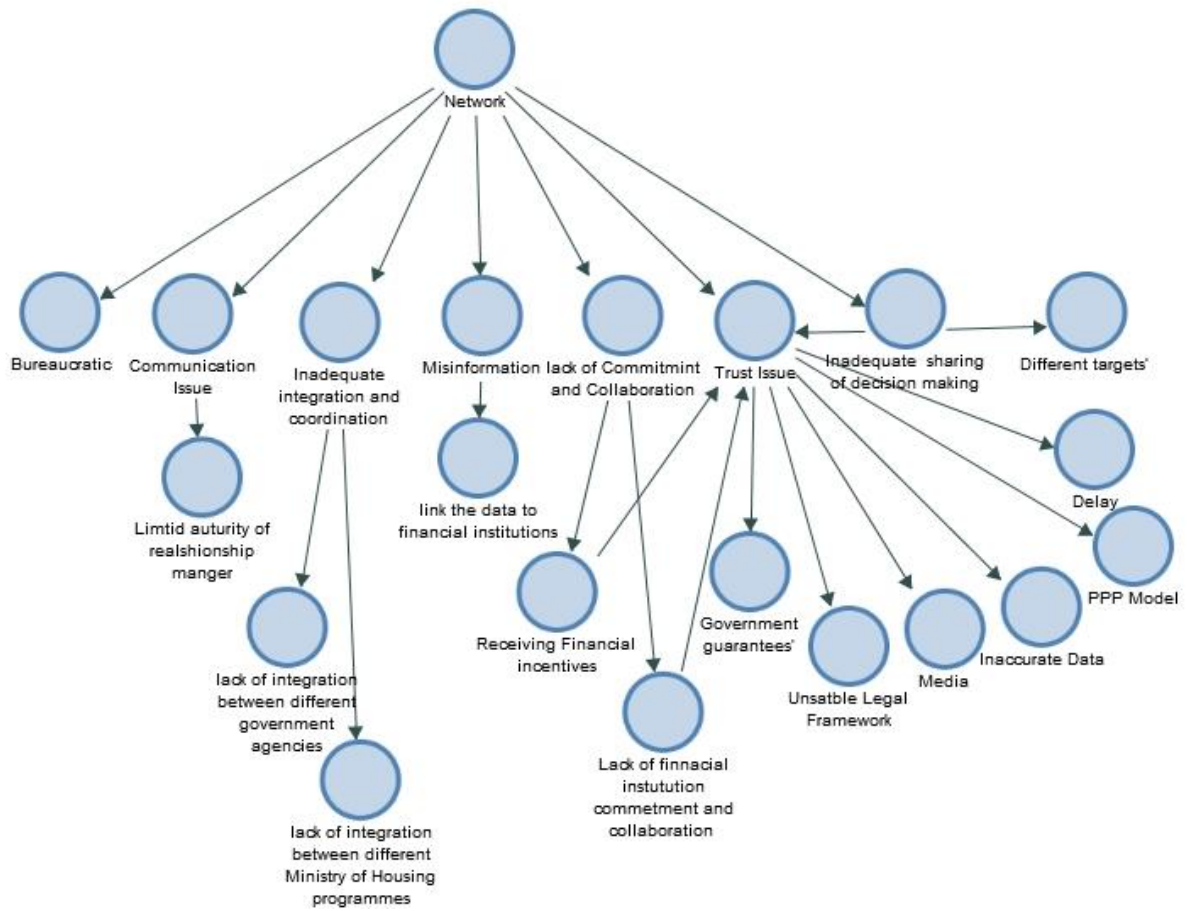


Figure 5-14 Challenges identified within the third theme (Network)

The final theme identified within this research is the project. The following section will discuss the challenges related to the PPP housing project.

5.3.4.3 Project of PPP Housing

Within this research, the third theme identified is the Project. The government provides incentives and an enabling environment in order to gain the participation of the housing market actors, and builds relationships and networks between different PPP actors, in order to gain the outcome of that partnership, the project. Cost and access to finance, demand uncertainty, risk allocation within the PPP housing project, scale and replicability, and time frame were identified as challenges that influence the implementation of PPP for the delivery of affordable housing for middle-income people in Saudi Arabia. Figure 5-15, below, illustrates factors related to PPP housing projects.

Name	Files	Referenc
Project		0
Cost and Access to Finance		8
Demand Uncertainty		6
Time Frame		5
Scale and Replicability		14
Risk allocation		9

Figure 5-15 Project challenges within the implementation of PPP in housing schemes

A. Cost and Access to Finance

The aim of PPP adoption in Saudi Arabia is to deliver affordable housing projects of reasonable price for low- and middle-income people with reasonable price and quality. Shifting to PPP as a strategy for the delivery of housing follows the assumption that it will bring more affordable housing at lower cost and will help to create access to home-ownership for middle-income people.

Participants within this study emphasised that the housing units within the PPP housing project are at the market price. Respondent P5 stated that *“the price of the housing unit through the PPP is fairly like the market price...You can sell more within a PPP housing schemes, but as a developer, if we are providing something through the PPP schemes, it should be within the market price. We cannot sell something which is within the market at SR2 million and we sell it on at SR1 million”* (P5). This was confirmed by participant P14 from the public sector: *“The mechanism that we have for pricing the housing products through the investment department is based on the market price without harming the benefits of the real estate developers”* (P14).

In contrast, respondent P9 believed that the PPP housing units are not at the market price, because the government has reduced the price of the PPP housing units by providing the real estate developer with some exemptions within the building height, and beneficiaries with interest-free loans and tax reduction for the housing product through the PPP housing scheme. *“For these reasons, citizens will find a housing product through the PPP cheaper than the housing product from the market”* (P9). In agreement with respondent P9, respondent P12 from the public sector emphasised that the target is to provide affordable housing for middle income households, so PPP housing unit products start from 200,000 SR to 700,000SR but should not go higher.

Furthermore, the government supports the beneficiaries with interest-free loans, such that beneficiaries will receive a 100% interest-free loan if their monthly income is from 4,000-14,000 SR. If it is greater than this range, the support will be reduced based on the individual

circumstances. Respondent P5 explained that the Ministry of Housing will pay the interest fees for beneficiaries' loans up to 500,000 SR: this is where the government support for the beneficiaries comes from. This was confirmed by respondents P1, P4, P8, P9, and P11.

However, access to finance for the beneficiaries to receive interest-free loans from the commercial banks was identified as a challenge facing the PPP housing scheme. Respondent P3 stated that the beneficiaries' personal loans and credit cards will affect their ability to receive a PPP housing loan supported by the Ministry of Housing, and this is related to financial institutions. In agreement with respondent P3, respondent P4 add that that the commercial banks will calculate the beneficiaries' financial burden and "*in many cases beneficiaries will appear that are not bankable, so they are rejected from commercial banks to receive interest-free loans*" (P4).

In agreement with respondents P4 and P3, respondent P8 confirmed this by stating that:

They are affordable housing units, but the problem is the purchasing power of the citizens is very weak, because they have a financial burden, they have personal loans, and that affects their purchasing power. For example, we have beneficiaries who are eligible for housing through the ESSKAN program but their purchasing power is limited because they have personal loans. They cannot afford PPP housing products now; they can afford it after four or five years, and this is the huge challenge.....even if a villa costs 1.5 million SR on the market, and if I ask the beneficiaries to pay SR800,000 for that villa, they still cannot afford to pay. It is a funding issue, (P8)

Furthermore, the respondents within this study confirmed that the cost of the PPP housing units could be lower and the support for the beneficiaries of the PPP housing scheme could be greater. Respondent P5 stated that:

...a lot of related things can really be reflected in the price of the PPP housing unit: labour fee, visa fee, customs, licensing fee, marketing fee. If we are dealing with middle income people, why it is not free?... If we built for those people who are in need, for the low-income people, we have to pay the same amount of fees that will be applied as someone who builds a palace with a floor-space of 5,000 square metres. ... As a private developer, any fees that I will take, I will reflect it to the price of the housing unit (P5).

Furthermore, respondents P2, P6, P4, and P7 agreed that better estimates of the price of the public land for the PPP housing project could reduce the cost of PPP housing units. For example, respondent P2, from the private sector, suggested that the PPP housing units could be more

affordable if the Ministry of Housing reduced the price of the public land for middle-income people, and that the price could be more attractive if the Ministry did not estimate the price of land at SR 400 per square metre, which is too high: *“The evolution of the price of the public land is one of the challenges, as this causes demand uncertainty and a lack of beneficiaries”* (P2).

Thus, beneficiaries’ access to finance through financial institutions within the PPP housing scheme was identified as a challenge facing PPP housing in Saudi Arabia, raising costs and hampering access for middle income people. Another challenge within the Project theme is demand uncertainty, which will be discussed in the following section.

B. Demand Uncertainty

House buyers’ demand for PPP housing projects has a significant impact on the implementation of the PPP housing scheme. The respondents within this study emphasised that demand uncertainty is a challenge facing the implementation of the PPP housing scheme. Respondent P3, from the private sector, explained: *“So today we are marketing for 10,000 beneficiaries within the eastern province in our project; when they get to the second stage, the 10,000 beneficiaries will be 1,000 beneficiaries”* (P3). Furthermore, respondent P2 confirmed this by stating that: *“This is going to put high risk on us, so when I start, we count our company cash flow for the project at 350 clients, and now we have 70 – that will put the company at risk”* (P2). All respondents from both the public and the private sector identified reasons for such demand uncertainty as follows: lack of beneficiaries’ awareness, flaws in beneficiaries’ journey through the process, incorrect target segment, lack of interest in design, too many options, and the PPP model adopted (off plan). These factors affect the demand uncertainty within the Saudi PPP housing scheme. Figure 5-16 illustrates these factors.

Name	Files	Referenc
Project		0
Demand Uncertainty		6
Lack of Awareness		12
Incorrect target segment		5
Inadequate Beneficiaries Journey		4
Many Options		7
PPP Model (off site)		7

Figure 5-16 Factors contributing to demand uncertainty within the PPP in housing Project in Saudi Arabia

Lack of beneficiaries’ awareness is one of the factors that cause demand uncertainty within the PPP housing scheme in Saudi Arabia, as stressed by respondents within this study. For example,

respondent P3 said, *“It could be due to the people’s interests and their needs: they are interested in a villa, but they cannot afford it. That could be a reason.”* In agreement with respondent P3, respondent P4 confirmed this by explaining that there are differences between beneficiaries’ interests and their needs. They are interested in purchasing a huge villa, but their purchasing power is limited, and they just need two rooms *“So, awareness is needed”*. In addition, Respondent P14 said, *“It is a problem of awareness that people have. If I came to the beneficiaries and try to convince them of their need – for example, if I try to explain to the end user that they just need a flat, not a villa – here is the problem: how can I accommodate your desire, your need and your capability and the supply?”* (P14).

The marketing for the eligible targeted segment for the PPP housing project within the Saudi PPP housing scheme is another reason for the demand uncertainty. This was confirmed by respondents P1, P2, P5, and P7, from the private sector, and P14, from the public sector. Respondent P1 asserted that there is a problem with the targeted segment of the population within the PPP housing scheme. For example, if a PPP housing unit costs SR700, 000, the targeted segment of beneficiaries should be eligible within their monthly income range, and this is the challenge. If a PPP housing project is marketed for 6,000 beneficiaries, the bankable beneficiaries will not exceed 300 beneficiaries. Also, respondent P7 stated that *“The PPP housing project targets people with income from 4-14 thousand Saudi Riyal, and not everybody is bankable, so I think the Ministry of Housing should restudy the target segment within the PPP housing schemes”* (P7).

Furthermore, respondents P2, P3, P6, and P7 identified another reason for the demand uncertainty, namely is the process of the beneficiary’s journey within the marketing stage, as they reserve a PPP housing unit before their bankability has been approved. For example, respondent P7 stated that *“the financial institutions or commercial banks will calculate beneficiaries’ purchasing power and their ability to afford a loan for the PPP housing unit or to determine whether or not the beneficiaries are bankable to take that loan, and this is the problem of the beneficiaries’ journey within the PPP housing scheme. Beneficiaries should be certified by the banks before the marketing stage and before the reservation of the PPP housing unit”* (P7). (See section 3.8.2, Figure 3-15, where the beneficiaries reserve housing units before approval of funding is received).

The Ministry of Housing’s lack of integration between the alternative housing programs it provides is another reason for the demand uncertainty. Respondents P2, P3, P6, P7, P10, P11, and P14 confirmed that the many options offered to beneficiaries by the Ministry of Housing cause demand uncertainty for the PPP housing projects. For example, Respondent P2 explained that the Ministry of Housing has three different programs – the PPP Housing Program (SHARAKAT), existing

housing units, and support for beneficiaries to buy from the market directly – and the lack of integration between these three different programs is a problem “*The Ministry of Housing started to distribute existing housing units to beneficiaries while we are marketing for the PPP housing projects, and that has affected real estate developers*” (P2). In agreement with respondent P2, respondent P14 confirmed this by stating that: “*The reservation list in most of the PPP housing projects does not exceed 60% because of the variety of options – every beneficiary will get an average of 4-5 invitations to visit different locations from different PPP projects and from existing housing unit projects*” (P14).

Moreover, respondents P3, P4, P8, P10, P12, P13, and P14 confirmed that the off-plan model adopted within the PPP implementation in the housing sector in Saudi Arabia causes a lack of trust from the side of beneficiaries, and as a result, demand uncertainty accrues in the PPP housing project (Section 3.8.1). Respondent P3 stressed that beneficiaries will refuse to pay for the housing unit from their interest-free loans and will wait three years to receive their PPP housing unit. Respondent P4 added that “*even within the PPP housing scheme, which has off-plan as a mechanism for housing delivery, there is no trust in the PPP housing schemes from the side of beneficiaries*” (P4), and this was confirmed by respondents P10 and P12. In addition, respondents P8, P12, P13, and P14 stressed that the model of PPP housing (off-plan) is not familiar and not trusted by the public, who call it “fish in the sea” (referring to paying for something that does not exist in the hands of the seller).

Hence, lack of beneficiaries’ awareness, incorrect target segment, lack of integration between different housing programs and too many options, lack of beneficiaries’ trust in the PPP model (off-plan), and inadequate beneficiaries’ journey within the marketing stage of the PPP housing scheme were identified as reasons why demand uncertainty developed. Thus, demand uncertainty is a factor that influences the implementation of PPP for the delivery of affordable housing for middle income people in Saudi Arabia. Another factor related to the project theme is the time frame of the implementation, which will be discussed in the following section.

C. Time frame of the PPP housing project

Within the implementation of the PPP housing project, the time frame is an influential factor. The Ministry of Housing started a number of large-scale PPP housing projects at the same time. Respondent P2 stressed that within the PPP housing scheme, the Ministry of Housing started work with all real estate developers at the same time. Also, Respondent P6 stated that “*it is a race against time. I wish we had done a pilot study as a role model, but unfortunately the Ministry of Housing does not have that time – the highest authority in the Kingdom does not have time – so*

we are working and adjusting and learning while moving at high speed, and this is what happens within every aspect in the country with the new Saudi Vision 2030” (P6). In addition, respondent P7 stressed that based on the government’s goals, the time frame is considered as a challenge.

Furthermore, respondents from the public sector confirmed that the time frame is an issue within the PPP housing implementation. Respondent P12 stated that *“the problem is that we start fast, and we want final results quickly. We start before establishing many things – for example, the contracts for selling the housing PPP units are still within the legal department ... our problem is the time frame”* (P12). Respondent P14 concurred: *“The time factor is needed”*. Hence, time was identified as a challenge influencing the implementation of PPP in the delivery of affordable housing for middle income people in Saudi Arabia.

D. Scale of PPP housing projects

The number of housing units produced by the PPP housing scheme in Saudi Arabia is limited. Respondents P1, P2, P3, P4, P5, P6, and P7 from the private sector agreed that there is a huge gap between the demand and the planned PPP projects. However, respondent P5 explained that not all the demand for housing will be through the PPP housing scheme: *“A large proportion of that housing supply will be through the Developmental Housing Program schemes where the people cannot pay for the loan from the bank, so there is a large proportion that depends on that scheme, and where their income is very low, they cannot afford to take out loans from financial institutions”* (P5). In agreement with respondent P5, respondent P3 confirmed this, explaining that currently the supply of public housing from the Ministry of Housing comes from three different programs, and not only through PPP. The same respondent added that *“previously, the target was to build 1.5 million housing units by 2020, with 250 thousand housing units every year. This number is huge, and it is not reasonable. Now they want to build 250 thousand housing units every four years under a different Ministry of Housing program. Now they provide other housing products like loans or existing housing or land in order to achieve this target”* (P3). However, respondent P14 from the public sector emphasised that the PPP housing scheme will not cover the housing need by 2020. There are around 46 PPP housing projects aiming to provide around 80 thousand housing units, but this accounts for no more than 20% of the 1.5 million units needed by 2020. P13 confirmed this: *“The implementation of the PPP is still in its infancy: there is a huge gap. The demand is still huge”* (P13).

The reason for the short supply of the PPP housing scheme is the limited capabilities of the real estate developer and the limited concept of real estate development (section 5.3.4.1-B). Respondent P6 stated that *“real estate developers’ ability in the Kingdom is limited. The number*

of real estate companies that could build more than 100 housing units in Saudi Arabia can be counted on the fingers of one hand” (P6).

Furthermore, respondents P7, P8, and P14 agreed that the concept of real estate development is limited in the Kingdom: *“Still the concept of real estate development is not efficient in Saudi Arabia, and this is the problem that we face with the partner, so we provide courses for the partner through the real estate institution, which is part of the Ministry of Housing, in order to develop our partner” (P8).* Also, respondent P6 added that *“there are so-called real estate developers that develop residential land and infrastructure ... then individual contractors built different housing units ... the housing units that were built in the past were developed individually, so every individual would build based on their need, and there were no real estate developers” (P6).* Therefore, it can be anticipated that the limited scale of the PPP housing scheme is due to the limited capabilities of the real estate developer and the limited concept of real estate development in Saudi Arabia.

E. Risk allocation

Sharing risk between partners is one of the fundamental characteristics of the PPP and has a significant impact on its implementation. Respondent P12 from the public sector stressed that within the PPP, there are no low or zero risk scenarios. In contrast, respondents P1, P3, and P7, from the private sector, and P9, P10, and P14, from the public sector, believed that the allocation of risk between partners is adequate and the risk is minimized by the government. For example, respondent P10 stated that:

The risk sharing within our PPP model is minimized for our partner: we implement ‘sell on the map’ as a model for our PPP housing project, which is financed not by the real estate developer, but by the beneficiaries’ loans, so the project is self-financed. This means that the risk is reduced for them: they will not start until they receive government guarantees, so ...all the partners are protected from risk. The Ministry will guarantee that the construction will not start until a certain proportion of housing products have been sold the risk is shared fairly between different partners and also the beneficiaries are saved by the law within our regulations where the Ministry of Housing works as a guarantor and monitor (P10).

Furthermore, Respondent P14 stated that if a project does not exceed 30% expected sales of the housing units, it is considered to have failed and does not proceed to the construction stage.

In contrast, respondents P2, P4, P5, and P6 agreed that even with the government’s incentives and guarantees, the risk is still high. Respondent P6 stressed that execution risk is another challenge that real estate developer face, even if the Ministry of Housing establishes a backup plan. Also, respondent P4 stated that the demand risk is the highest that real estate developers have within the PPP housing scheme. Also, P5 added that *“before the real construction starts, everybody is good”* – real estate developers are still at the marketing stage, where the beneficiaries will not accept this product because it will not be delivered for three years or because of their personal financial problems or bankability.

Furthermore, respondent P2 stated that an unstable legal framework is the basis of high risk on the real estate developer within the PPP housing scheme: *“Yesterday they asked us to sign the same contract that we had already signed because they had updated it. I had already started and signed with the people and they still updated the contract between the financial institution and the real estate developer. They have a legal framework, but it is new and they update it every day: they try it on with us, but this is going to put high risk on us”* (P2). Thus, an unstable legal framework and demand uncertainty are reasons for the risk challenge for the implementation of PPP in the delivery of affordable housing for middle income households in Saudi Arabia. To summarise, within the third theme (Project), several challenges were identified by the interview respondents, namely cost and access to finance, demand uncertainty, scale and replicability, time frame, and risk allocation.

Figure 5-17, below, illustrate the challenges of the third theme, Project.

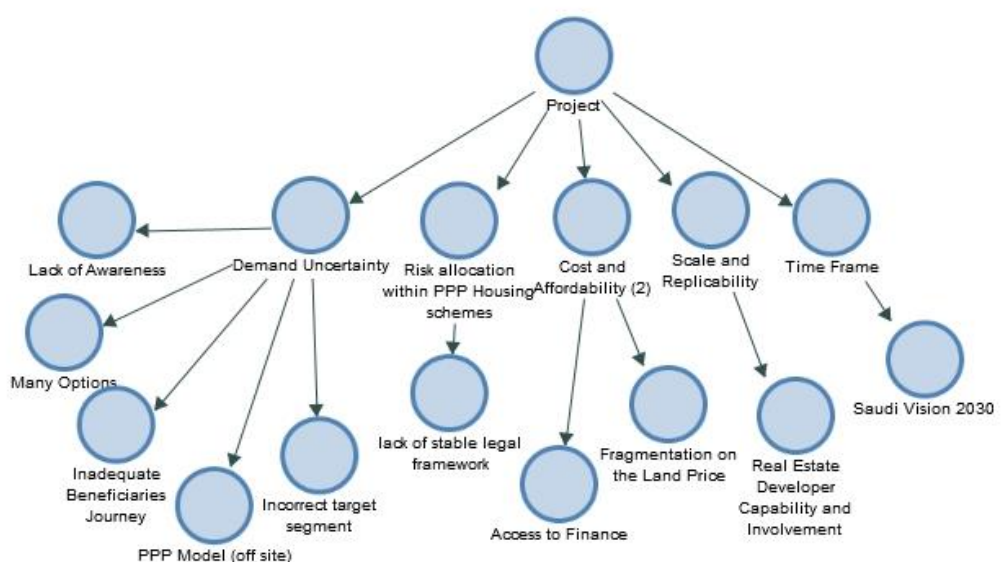


Figure 5-17 Challenges within the third theme (Project)

Therefore, within the thematic analysis, the challenges faced in the implementation of PPP in the Saudi housing sector, as obtained from the interview analysis, were categorised into three main themes – Actors, Network, and Project – as discussed in this main section. The following section will present the main findings from the interviews.

5.3.5 Interview Main Findings

The following are the main findings from the semi-structured interview analysis:

- The main actors within the Saudi PPP housing scheme are the real estate developers, the National Housing Company, and financial institutions, while the third sector organisations have no role within the Saudi PPP housing scheme.
- Unclear mechanism for receiving government financial incentives and an unstable legal framework are two major challenges facing the real estate developers within the PPP housing scheme.
- The real estate developers' capabilities have been identified as an issue with the Saudi PPP housing scheme
- The financial institutions' participation in the PPP housing scheme is limited and their commitment and collaboration has been identified as a challenge.
- The communication between different PPP stakeholders has been identified as a challenge that faces the current implementation faces despite the role of relationship managers from the PPP unit.
- Government bureaucracy is rife, and challenges the implementation of the PPP housing scheme.
- Lack of sharing of decision-making between the different PPP housing stakeholders has been identified as a challenge and is influenced by government bureaucracy on decision-making and the different targets between different stakeholders
- Inadequate integration and coordination have influenced the PPP housing schemes in two aspects: first, lack of integration between different government agencies that are related to housing; and second, lack of integration and coordination between different Ministry of Housing departments and programs.
- Availability of information and the accuracy of data related to the financial capability of the PPP housing beneficiaries have been identified by the respondents as challenges facing the implementation of the PPP housing scheme.
- All the respondent agreed in identifying trust as an issue between different stakeholders for the following reasons: lack of commitment and collaboration from financial institutions, real estate developers' failure to receive financial incentives within the PPP housing scheme, government guarantees, unstable legal framework, project announcement (media), inaccurate data related to beneficiaries' financial situation, the PPP model adopted (off-plan), delays, and inadequate sharing of decision-making.

- Beneficiaries' access to finance through financial institutions within the PPP housing scheme was identified as a challenge facing the PPP housing scheme.
- Demand uncertainty has been identified as a challenge facing the implementation of the PPP housing scheme for the following reasons: lack of beneficiaries' awareness, incorrect target segment, lack of integration between different housing programs and too many options, lack of beneficiaries' trust in the PPP model (off-plan), and inadequate beneficiaries' journey within the marketing stage of the PPP housing scheme.
- The limited time frame that was established as part of the Saudi vision 2030 for the implementation of the PPP housing project has been identified as a challenge.
- The limited scale of the PPP housing scheme is due to the limited capabilities of the real estate developer and the limited concept of real estate development in Saudi Arabia.
- The unstable legal framework and demand uncertainty are two challenges risking the implementation of PPP in the delivery of affordable housing for middle income households in Saudi Arabia.

Within the thematic analysis of the interview data, respondents emphasised the relationships between the various related themes and subthemes that are investigated within the implementation of delivery of affordable housing for middle income people in Saudi Arabia. In order to help understand the interrelationships and provide a holistic picture that captures different nodes or concepts within the identified themes and subthemes, cognitive mapping has been utilized. The various investigated themes can be mapped in the following cognitive map in Figure 5-18 in order to help understand the interrelationships between different nodes or subthemes that are discussed within this chapter.

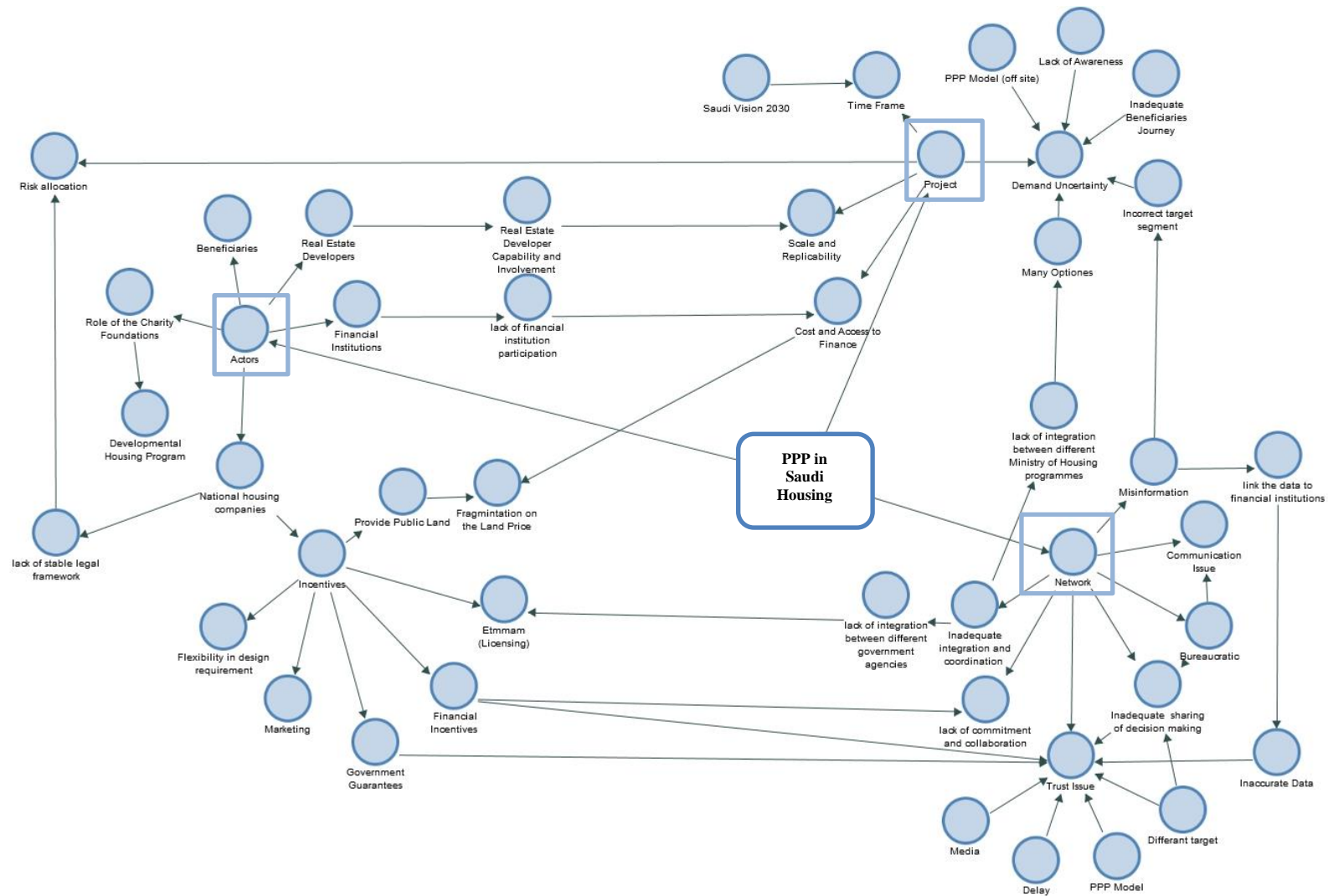


Figure 5-18 Cognitive mapping of the challenge facing the implementation of PPP in Housing Sector in Saudi Arabia

5.4 Summary

This chapter has brought together key findings from the document review and semi-structured interviews. Based on the document review, various actors were identified, the adopted PPP structure was highlighted, and the various associated enabling programs within the implementation of PPP in the housing sector to enable the PPP housing scheme were explained. Also, middle income households' access to the PPP housing project and the scale of the PPP housing project were highlighted. The findings from this document review reflect the current practice for the implementation of PPP in the delivery of affordable housing for middle income people in Saudi Arabia and represent the challenge faced by PPP housing schemes. Furthermore, the key findings were set out from the respondents' experiences, which reflect the current challenges to the implementation of PPP in the delivery of housing from both the public and the private sector. The findings from semi-structured interviews were discussed based on the three themes identified: Actors, Network, and Project. Within the first theme, Actors, several challenges were identified as follows: unclear mechanism for receiving financial incentives, unstable legal framework, limited real estate developers' capabilities, lack of financial institution participation, and absence of third sector organizations. Furthermore, within the second theme, communication issues, lack of integration and coordination, trust issues, lack of commitment and collaboration, inadequate sharing of decision-making, misinformation, and bureaucracy were identified as factors affecting the network between different actors of the PPP housing scheme in Saudi Arabia. In addition, within the third theme, Project, several related challenges were identified and discussed as follows: demand uncertainty, risk allocation, time frame, cost and affordability of the PPP housing units, and the scale and replicability of the PPP housing projects. Finally, a cognitive map, which provides a visual representation of the interrelationships and links between different themes and subthemes, was also developed within this chapter.

CHAPTER VI – Framework Development, Discussion & Validation

6 Framework Development, Discussion & Validation

6.1 Introduction

The previous chapter explained the findings from the data collection stage of this study, and reflected the challenge of PPP implementation on the housing sector in Saudi Arabia for the delivery of affordable housing for middle income groups. The aim of this chapter is to present the developed framework that answers the main question of this research: How could PPP contribute to better development of affordable housing in Saudi Arabia? In addition, this chapter will address the final objective of this study by presenting the development of the proposed framework for the implementation of PPP in the housing sector in Saudi Arabia, followed by the discussion and validation of the proposed framework. Furthermore, in this chapter, a rationale for the framework development is presented, to help decision-makers in the housing sector in Saudi Arabia to improve and to contribute to better development of PPP in the housing sector. More specifically, this chapter will discuss the utilization of Interpretive Structural Modelling (ISM) and MICMAC analysis to develop a comprehensive ISM framework to provide a more accurate way of selecting the most significant challenges that impact the implementation of PPP for the delivery of affordable housing in Saudi Arabia.

6.2 Development and implementation of the ISM

When developing a framework for PPP that could contribute towards improving the delivery of affordable housing for middle-income households in Saudi Arabia by using ISM, Kumar, Luthra, and Haleem (2013) suggest eight stages that should be followed, as set out below.

First: Identify the variables or components that are related to the problem. This was achieved through the literature review of this study and the data collection through documentation and semi-structured interviews with experts from both the public and the private sector.

Second: Find the contextual relationships among the variables identified in step one.

Third: Develop a Structural Self-Interaction Matrix (SSIM) for the different identified variables to represent pairwise relationships among variables.

Forth: From the SSIM, develop a reachability matrix in stage four and check transitivity in order to state that if variable A is related to variable B and variable B is related to variable C, then variable A is necessarily related to variable C.

Fifth: Partition the reachability matrix developed in step four into different levels.

Sixth: Draw a directed graph, based on the contextual relationships developed in the reachability matrix.

Seventh: Replace variable nodes with statements to form the ISM.

Eighth: In the last step, the ISM model developed will be checked for conceptual inconsistency, and necessary modifications will be made.

Following the above eight steps of the ISM enables the researcher to create and present the relationships between the different challenges identified within this study and develop the proposed framework. The development of the ISM was achieved through focus group discussions, which will be elaborated in the following section.

6.2.1 Selecting participants for the focus group

The participants in the focus group interviews needed to have knowledge and understanding of the current practice and associated challenges facing the implementation of PPP in the Saudi housing sector. The focus group participants consisted of stakeholders from the private real estate sector who were identified as partners in the current PPP housing scheme, a relationship manager from the PPP unit, and a senior manager from the Ministry of Housing, as well as two other participants: one from the academic field who has a background in Saudi housing challenges, and another participant who works as a consultant for UN-Habitat in Riyadh. Each of the participants had a wealth of experience on the current Saudi PPP housing scheme. Table 6-1 shows the participants in the focus group and the reasons for their selection.

Table 6-1 Justification for identified participants in focus group

Code	Position	Organization	Reason
P-1	Lecturer	Academic	Saudi Housing Researcher
P-2	Consultant	UN-Habitat	Consultant
P-3	Project Manager	Real estate Developer	Partner in Saudi PPP housing scheme
P-4	Relationship Manager	PPP unit	Top-level management on the PPP unit
P-5	Senior Manager	Ministry of Housing	Selected for his role as one of the decision makers on Saudi PPP housing scheme

The researcher acted as the facilitator in conducting the focus group in order to control and extract the significant information. The focus group discussions were all audio-recorded and later transcribed. In May 2019, two rounds of focus group meetings were held in a seminar room in the Ministry of Housing, Riyadh, Saudi Arabia, and each meeting lasting for approximate three hours.

When the participants had identified all the relationships between the different factors, the Structural Self-Interaction Matrix (SSIM) was constructed. The following section shows the development of this matrix.

6.2.2 Structural Self-Interaction Matrix

A SSIM table was drawn to allow analysis of the contextual relationships between the 24 factors. The SSIM was developed based on the focus group discussion. The facilitator used the symbols V, A, X, and O to indicate the relationships between different factors. These symbols show whether the direction of the relationship between two elements i and j is from factor i to factor j; or from factor j to factor i; or the relationship between two factors is bidirectional; or a relationship does not exist between the two factors as following table 6-3:

Table 6-2 Rule of SSIM Development(Kukuh et al., 2019) .

Symbol	Relationship between row (i) and Column (j) elements
V	Factor j will lead to factor i, not in reverse direction
A	Factor i will lead to factor j, not in reverse direction
X	Factors i and j will lead to each other, in both directions
O	Factors i and j are unrelated

The following will explain the use of the symbols V, A, X and O in SSIM (Table 6-5):

- Factor 24 will help to achieve factor 1. This means that factor 1, “unstable legal framework”, is affected by the absence of factor 24, “experts”. Thus, the relationship between variables 1 and 24 is denoted by “V” in Table 6-5.
- Factor 11 will help to achieve factor 15. This means that factor 11, “trust issues”, would help to achieve factor 15, “demand uncertainty”. The trust issues impact the demand uncertainty for the PPP housing project in Saudi Arabia. Thus, the relationship between these factors is denoted by “A” in Table 6-5.
- Factors 2 and 17 – “government guarantees” and “risk allocation” – help to achieve each other. Thus, the relationship between these factors is denoted by “X” in Table 6-5.
- No relationship exists between factor 4, “lack of financial institution participation” and factor 18, “Fragmentation of public land price”, and hence, the relationship between these variables is denoted by “O” in Table 6-5.

Based on similar contextual relationships, the SSIM is developed for all the 24 factors associated with the implementation of PPP in the Saudi housing sector. Table 6-4, below, presents the experts’ classification of relationships among the different factors that are identified within this research.

Table 6-3:SSIM

NO.	LIST OF FACTORS	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
1	Unstable legal framework	V	V	V	O	A	O	o	A	A	O	O	V	V	X	O	A	X	X	V	A	A	A	A	x
2	Government guarantees	v	v	X	O	A	O	O	X	A	O	A	O	O	A	O	O	A	O	O	O	A	O	x	
3	Real estate developer capabilities	0	O	V	A	V	V	V	V	A	V	V	O	A	V	V	V	A	O	O	O	V	x		
4	Lack of financial institution participation	X	O	V	A	x	O	O	V	A	x	X	V	V	V	V	V	X	V	O	O	x			
5	Lack of third sector Participation	O	A	A	O	O	O	O	O	O	A	A	V	O	X	V	O	A	O	O	x				
6	Communication issues	O	V	X	O	A	O	O	O	A	O	O	V	O	x	O	X	X	X	x					
7	Inadequate integration and coordination	V	V	X	A	A	X	O	A	V	O	O	V	O	V	X	V	A	x						
8	Lack of Commitment and collaboration	X	V	V	A	A	O	O	X	A	A	A	V	O	A	X	V	x							
9	Misinformation	O	X	X	O	X	X	O	A	A	A	A	V	O	X	X	x								
10	Lack of shared decision making	O	X	X	O	O	O	O	X	O	A	A	X	O	X	x									
11	Trust issues	V	X	X	O	X	V	V	V	V	X	V	V	V	x										
12	PPP model (off plan)	V	V	V	A	X	V	O	A	X	A	X	O	x											
13	Bureaucracy	O	A	A	A	A	O	A	A	A	A	O	x												
14	Cost and access to finance	O	O	X	A	X	O	X	A	O	X	x													
15	Demand uncertainty	O	V	V	X	V	V	X	A	O	x														
16	Time frame	O	O	V	X	X	O	O	A	x															
17	Risk allocation	V	V	V	O	X	V	V	x																
18	Fragmentation on public land price	V	O	V	V	O	O	x																	
19	Media	V	v	V	X	A	X																		
20	Delays	V	O	V	O	x																			
21	Scale of PPP housing supply	V	O	V	x																				
22	Different targets between partners	o	V	x																					
23	Awareness	X	x																						
24	Expertise	x																							

6.2.3 Reachability Matrix

The following steps in the development of the ISM serve to transfer the SSIM into the reachability matrix. The reachability matrix was developed based on the SSIM by converting it to a matrix by substituting symbols V, A, X, and O with 1 and 0 for each case. The substitutions rules for 1 & 0 are as follows:

First: if the (i, j) entry in the SSIM is V, then the (i, j) entry in the reachability matrix becomes 1 and the (j, i) entry is 0.

Second: If the (i, j) entry in the SSIM is A, then the (i, j) entry in the reachability matrix becomes 0 and the (j, i) entry is 1.

Third: If the (i, j) entry in the SSIM is X, then the (i, j) entry in the reachability matrix becomes 1 and the (j, i) entry is 1.

Forth: If the (i, j) entry in the SSIM is O, then the (i, j) entry in the reachability matrix is equal 0 as well as the (j, i) entry is also becomes 0.

By following these rules, the initial reachability is matrix developed, as shown below in Table 6-5.

Table 6-4 Initial Reachability Matrix

NO.	LIST OF FACTORS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1	Unstable legal framework	1	0	0	0	0	1	1	1	0	0	1	1	1	0	0	0	0	0	0	0	0	1	1	1	
2	Government guarantees	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	
3	Real estate developer capabilities	1	0	1	1	0	0	0	0	1	1	1	0	0	1	1	0	1	1	1	1	0	1	0	0	
4	Lack of financial institution participation	1	1	0	1	0	0	1	1	1	1	1	1	1	1	1	0	1	0	0	1	0	1	0	1	
5	Lack of third sector participation	1	0	0	0	1	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	
6	Communication issues	0	0	0	0	0	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	0	1	1	0	
7	Inadequate integration and coordination	1	0	0	0	0	1	1	0	1	1	1	0	1	0	0	1	0	0	1	0	0	1	1	1	
8	Lack of commitment and collaboration	1	1	1	1	1	1	1	1	1	1	0	0	1	0	0	0	1	0	0	0	0	1	1	1	
9	Misinformation	1	0	0	0	0	1	0	0	1	1	1	0	1	0	0	0	0	0	1	1	0	1	1	0	
10	Lack of shared decision making	0	0	0	0	0	0	1	1	1	1	1	0	1	0	0	0	1	0	0	0	0	1	1	0	
11	Trust issue	1	1	0	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1
12	PPP model (off plan)	0	0	1	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	1	0	1	1	1	
13	Bureaucracy	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
14	Cost and access to finance	0	1	0	1	1	0	0	1	1	1	0	1	0	1	1	0	0	1	0	1	0	1	0	0	
15	Demand uncertainty	0	0	0	1	1	0	0	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	0	
16	Time frame	1	1	1	1	0	1	0	1	1	0	0	1	1	0	0	1	0	0	0	1	1	1	0	0	
17	Risk allocation	1	1	0	0	0	0	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0	1	1	1	
18	Fragmentation on public land price	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	0	0	1	1	0	1	
19	Media	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	
20	Delay	1	1	0	1	0	1	1	1	1	0	1	1	1	1	0	1	1	0	1	1	0	1	0	1	
21	Scale of PPP housing supply	0	0	1	1	0	0	1	1	0	0	0	1	1	1	1	1	0	0	1	0	1	1	0	1	
22	Different targets between partners	0	0	0	0	1	1	1	0	1	1	1	0	1	1	0	0	0	0	0	0	0	1	1	0	
23	Awareness	0	0	0	0	1	0	0	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	
24	Expertise	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	

6.2.4 Final Reachability Matrix

The next step on ISM is to develop the final reachability matrix, which is obtained by incorporating the transitivity as enumerated in Step 4 of the ISM methodology. The final reachability matrix is constructed from the initial reachability matrix by applying the transitivity rule. Transitivity is a fundamental assumption that results in the final reachability matrix in ISM, which states that “if variable A is related to variable B and variable B is related to variable C, then variable A is necessarily related to variable C”. For example, Variable 5 leads to variables 1, 2, 3, 4, and 6. Variable 7 leads to variables 1, 2, 3, 4, and 5, and then variable 6 must be added to variable 7 as a transitive element and so on (S. Kumar et al., 2013). Table 6-6, below, shows the final reachability matrix that is built based on the initial reachability matrix with the applied transitivity rule, and transitivity marked as 1*.

Table 6-5 Final Reachability Matrix

NO.	LIST OF FACTORS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1	Unstable legal framework	1	0	0	0	0	1	1	1	0	0	1	1	1	0	0	1*	0	0	0	0	0	1	1	1	
2	Government guarantees	1	1	0	0	0	1*	1*	1*	0	0	1*	1*	1*	0	0	0	1	0	0	0	0	1	1	1	
3	Real estate developer capabilities	1	0	1	1	0	1*	1*	1*	1	1	1	1*	1*	1	1	0	1	1	1	1	1*	1	1*	0	
4	Lack of financial institution participation	1	1	0	1	0	1*	1	1	1	1	1	1	1	1	1	0	1	0	0	1	0	1	1*	1	
5	Lack of third sector participation	1	0	0	0	1	1*	1*	1*	0	1	1	1*	1	0	0	0	0	0	0	0	0	1*	1*	1*	
6	Communication issues	0	0	0	0	0	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	0	1	1	0	
7	Inadequate integration and coordination	1	0	0	0	0	1	1	1*	1	1	1	1*	1	0	0	1	1*	0	1	0	0	1	1	1	
8	Lack of commitment and collaboration	1	1	1	1	1	1	1	1	1	1	1*	1*	1	1*	1*	1*	1	1*	1*	1*	1*	0	1	1	1
9	Misinformation	1	0	0	0	0	1	1*	1*	1	1	1	1*	1	0	0	0	0	0	1	1	0	1	1	1*	
10	Lack of shared decision-making	0	0	0	0	0	0	1	1	1	1	1	0	1	0	0	1*	1	0	0	0	0	1	1	0	
11	Trust issues	1	1	0	0	1	1	1*	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1
12	PPP model (off plan)	0	0	1	1*	0	0	0	0	1*	1*	0	1	0	1	1*	1	0	1*	1	1	0	1	1	1	
13	Bureaucracy	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
14	Cost and access to finance	0	1	0	1	1	0	0	1	1	1	0	1	0	1	1	0	0	1	0	1	1*	1	0	0	
15	Demand uncertainty	0	0	0	1	1	0	0	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	0	
16	Time frame	1	1	1	1	0	1	1*	1	1	1*	1*	1	1	1*	1*	1	1*	1*	1*	1*	1	1	1	1*	1*
17	Risk allocation	1	1	0	0	0	1*	1	1	1	1	1*	1	1	1	1	1	1	1	1	1	1	0	1	1	1
18	Fragmentation on public land price	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	0	0	1	1	0	1	
19	Media	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1*	0	0	1	0	1	1	1	1	
20	Delay	1	1	0	1	0	1	1	1	1	0	1	1	1	1	0	1	1	0	1	1	0	1	1*	1	
21	Scale of PPP housing supply	0	0	1	1	0	0	1	1	1*	1*	0	1	1	1	1	1	0	1*	1	1*	1	1	0	1	
22	Different targets between partners	0	0	0	0	1	1	1	0	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	0
23	Awareness	0	0	0	0	1	0	0	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1
24	Expertise	0	0	0	1	0	0	0	1	1*	1*	0	0	0	0	0	0	0	1*	1*	1*	0	0	1	1	

6.2.5 Level Partitions

The next step in developing the ISM is the level partitions. The objective of this stage is to enable the building of the digraph from the final reachability matrix. The reachability and antecedent set of each variable can be found in the final reachability matrix: the ‘reachability set’ consists of the variable itself and other variables that it may lead to or may help to achieve. The Attendance sets consist of the variable itself and other variables that may help to achieve it. Level one or the top level in the hierarchy of the ISM is specified to the variables with the same reachability and intersection sets, where those variables are not useful to lead to or achieve any alternate variable that is above their own level.

After the first iteration (Table 6-7), factor 10 (lack of shared decision-making) and factor 13 (bureaucracy) were found to be lower-level factors and had no associations with other factors above their level, and were thus placed at level 1. After the identification of a top-level element, it is discarded from the pool of remaining factors. In order to find the next level on the ISM hierarchy, the process is repeated, and this is performed until the level of every factor is determined.

The second iteration (Table 6-8), led to factors 23 (awareness), and factor 24 (expertise). These two factors were removed and placed at Level 2. In the third iteration (Table 6-9), factor 6 (communication issues) and factor 22 (different targets between partners) were removed and placed at Level 3. In the fourth iteration (Table 6- 10), factors 18 (fragmentation on public land price) and 19 (media) were removed and placed at Level 4. In the fifth iteration (Table 6-11), factor 12 (PPP model: off-plan) was removed and placed at Level 5. For the sixth iteration (Table 6-12), factors 1 (unstable legal framework), 7 (inadequate integration and coordination), and 8 (lack of commitment and collaboration) were removed and placed at level 6. In the seventh iteration (Table 6-13), factor 2 (government guarantees), factor 5 (lack of third sector participation), and factor 9 (misinformation) were removed and placed at level 7.

In the eighth iteration (Table 6-14), factor 14 (cost and access to finance), and factor 20 (delays) were removed and placed at level 8. In ninth iteration (Table 6-15), factor 11 (trust issues) and factor 15 (demand uncertainty) were removed and placed at level 9. In the tenth iteration (Table 6-16), factor 17 (risk allocation) was removed and place at level 10. In the eleventh iteration (Table 6-17), factor 4 (lack of financial institution participation) was removed and placed at level 11. In the twelfth iteration (Table 6-18), factor 21 (scale of PPP housing supply) was removed and placed on level 12. In the thirteenth iteration (Table 6-19), factor 3 (real estate developer capabilities) was removed and placed at level 13. In the fourteenth and final iteration (Table 6-20), factor 16 (time

frame) was removed and placed at level 14. The levels so determined helped in building the final framework.

Table 6-6 Partition of RM: Iteration 1

Measure	Reachability Set	Antecedent set	Intersection	Level
1	1,6,7,8,11,12,13,16,22,23,24	1,2,3,4,5,7,8,9,11,16,17,20	1,7,8,11,16	
2	1,2,6,7,8,11,12,13,17,22,23,24	2,4,5,11,14,16,17,20	2,11,17	
3	1,3,4,6,7,8,9,10,11,12,13,14,15,17,18,19,20,21,22,23	3,8,11,14,16,17,20	3,8,11,14,17,20	
4	1,2,4,6,7,8,9,10,11,12,13,14,15,17,20,22,23,24	3,4,8,12,14,15,22,23	2,4,8,12,14,22,23	
5	1,5,6,7,8,10,11,12,13,22,23,24	5,8,11,14,15,22,23	5,8,11,22,23	
6	6,7,8,9,11,13,22,23	1,2,3,4,5,6,7,8,9,11,16,17,20,22	6,7,8,9,11,22,23	
7	1,6,7,8,9,10,11,12,13,16,17,19,22,23,24	1,2,3,4,5,6,7,8,9,10,11,16,17,19,20,21,22	1,6,7,8,9,10,11,16,17,19,22	
8	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,22,23,24	1,2,3,4,5,6,7,8,9,10,11,14,15,16,17,20,21,24	1,2,3,4,5,6,7,8,9,10,11,14,15,16,17,20,24	
9	1,6,7,8,9,10,11,12,13,19,20,22,23,24	3,4,6,7,8,9,10,11,12,14,15,16,17,19,20,21,22,23,24	6,7,8,9,10,11,12,19,20,22,23,24	
10	7,8,9,10,11,13,16,17,22,23	3,4,5,7,8,9,10,11,12,13,14,15,16,17,21,22,23,24	7,8,9,10,11,13,16,17,22,23	1
11	1,2,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24	1,2,3,4,5,6,7,8,9,10,11,15,16,17,19,22,23	1,2,5,6,7,8,9,10,11,15,16,17,19,22,23	
12	3,4,9,10,12,14,15,16,18,19,20,22,23,24	1,2,3,4,5,7,8,9,11,12,14,15,16,17,20,21	3,4,9,12,14,15,16,20	
13	10,13	1,2,3,4,5,6,7,8,9,10,11,13,15,16,17,18,19,20,21,22,23	10,13	1
14	2,4,5,8,9,10,12,14,15,18,20,21,23	3,4,8,11,12,14,15,16,17,18,20,21,22,24	4,8,12,14,15,18,20,21	
15	4,5,8,9,10,11,12,13,14,15,18,19,20,21,22,23	3,4,8,11,12,14,15,16,17,18,21,24	4,8,11,12,14,15,18,21	
16	1,2,3,4,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24	1,7,8,10,11,12,15,16,19,20,21	1,7,8,10,11,12,15,16,19,20,21	
17	1,2,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,22,23,24	2,3,4,7,8,10,11,16,17,20	2,7,8,10,11,14,16,17,20	
18	13,14,15,18,21,22,24	3,8,11,12,14,15,16,17,18,21,24	14,15,18,21,24	
19	7,9,16,19,20,22,23,24	3,7,8,9,11,12,15,16,17,19,20,21,23,24	7,9,16,19,20,23,24	
20	1,2,4,6,7,8,9,11,12,13,14,16,17,19,20,22,23,24	3,4,8,9,11,12,14,15,16,17,20,21,24	4,8,9,11,12,14,16,17,20,24	
21	3,4,7,8,9,10,12,13,14,15,16,18,19,20,21,22,24	3,11,14,15,16,18,19,21	3,14,15,16,18,19,20,21	
22	5,6,7,9,10,11,13,14,22,23	1,2,3,4,5,6,7,8,9,10,11,12,14,15,16,17,18,19,20,21,22	5,6,7,9,10,11,14,22	
23	5,9,10,11,13,23,24	1,2,3,4,5,6,7,8,9,10,11,12,15,16,17,19,20,22,23,24	5,9,10,11,23,24	
24	4,8,9,10,18,19,20,23,24	1,2,3,4,5,7,8,9,11,12,16,17,18,19,20,21,23,24	4,8,9,18,19,20,23,24	

Table 6-7 Partition of RM: Iteration 2

Measure	Reachability Set	Antecedent set	Intersection	Level
1	1,6,7,8,11,12,16,22,23,24	1,2,3,4,5,7,8,9,11,16,17,20	1,7,8,11,16	
2	1,2,6,7,8,11,12,17,22,23,24	2,4,5,11,14,16,17,20	2,11,17	
3	1,,3,4,6,7,8,9, 11,12,14,15,17,18,19,20,21,22,23	3,8,11,14,16,17,20	3,8,11,14,17,20	
4	1,2,4,6,7,8,9, 11,12,14,15,17,20,22,23,24	3,4,8,12,14,15,22,23	2,4,8,12,14,22,23	
5	1,5,6,7,8, ,11,12, ,22,23,24	5,8,11,14,15,22,23	5,8,11,22,23	
6	6,7,8,9,11, ,22,23	1,2,3,4,5,6,7,8,9,11,16,17,20 ,22	6,7,8,9,11,22,23	
7	1,6,7,8,9, ,11,12, 16,17,19,22,23,24	1,2,3,4,5,6,7,8,9, ,11,16,17,19,20,21,22	1,6,7,8,9, ,11,16,17,19,22	
8	1,2,3,4,5,6,7,8,9, ,11,12, ,14,15,16,17,18,19,20,22,23,24	1,2,3,4,5,6,7,8,9, 11,14,15,16,17,20,21,24	1,2,3,4,5,6,7,8,9,11,14, 15,16,17,20,24	
9	1,6,7,8,9,10,11,12, ,19,20,22,23,24	3,4,6,7,8,9, ,11,12,14,15,16,17,19,20,21, 22,23,24	6,7,8,9,11,12,19,20,22, 23,24	
11	1,2,5,6,7,8,9, ,11,12, ,14,15,16,17,18,19,20,21,22,23,24	1,2,3,4,5,6,7,8,9, 11,15,16,17,19,22,23	1,2,5,6,7,8,9, 11,15,16,17,19,22,23	
12	3,4,9,10,12,14,15,16,18,19,20,22,23,2 4	1,2,3,4,5,7,8,9,11,12,14,15,1 6,17,20,21	3,4,9,12,14,15,16,20	
14	2,4,5,8,9,12,14,15,18,20,21,23	3,4,8,11,12,14,15,16,17,18,2 0,21,22,24	4,8,12,14,15,18,20,21	
15	4,5,8,9, ,11,12, 14,15,18,19,20,21,22,23	3,4,8,11,12,14,15,16,17,18,2 1,24	4,8,11,12,14,15,18,21	
16	1,2,3,4,6,7,8,9, ,11,12, ,14,15,16,17,18,19,20,21,22,23,24	1,7,8,10,11,12,15,16,19,20,2 1	1,7,8, 11,12,15,16,19,20,21	
17	1,2,6,7,8,9,10,11,12, ,14,15,16,17,18,19,20,22,23,24	2,3,4,7,8, ,11,16,17,20	2,7,8, 11,14,16,17,20	
18	14,15,18,21,22,24	3,8,11,12,14,15,16,17,18,21, 24	14,15,18,21,24	
19	7,9,16,19,20,22,23,24	3,7,8,9,11,12,15,16,17,19,20 ,21,23,24	7,9,16,19,20,23,24	
20	1,2,4,6,7,8,9,11,12, ,14,16,17,19,20,22,23,24	3,4,8,9,11,12,14,15,16,17,20 ,21,24	4,8,9,11,12,14,16,17,2 0,24	
21	3,4,7,8,9, 12, ,14,15,16,18,19,20,21,22,24	3,11,14,15,16,18,19,21	3,14,15,16,18,19,20,21	
22	5,6,7,9, 11, ,14,22,23	1,2,3,4,5,6,7,8,9, ,11,12,14,15,16,17,18,19,20, 21,22	5,6,7,9,11,14,22	
23	5,9,11,23,24	1,2,3,4,5,6,7,8,9,11,12,15,16 ,17,19,20,22,23,24	5,9,11,23,24	2
24	4,8,9, 18,19, 20,23,24	1,2,4,5,7,8,9,11,12, 16,17,18,19,20,21,23,24	4,8,9,18,19,20,23,24	2

Table 6-8 Partition of RM: Iteration 3

Measure	Reachability Set	Antecedent set	Intersection	Level
1	1,6,7,8,11,12,16,22,	1,2,3,4,5,7,8,9,11,16,17,20	1,7,8,11,16	
2	1,2,6,7,8,11,12,17,22,	2,4,5,11,14,16,17,20	2,11,17	
3	1,3,4,6,7,8,9, 11,12,14,15,17,18,19,20,21,22	3,8,11,14,16,17,20	3,8,11,14,17,20	
4	1,2,4,6,7,8,9, 11,12,14,15,17,20,22,	3,4,8,12,14,15,22,	2,4,8,12,14,22,	
5	1,5,6,7,8,11,12,22	5,8,11,14,15,22,	5,8,11,22,	
6	6,7,8,9,11,22,	1,2,3,4,5,6,7,8,9,11,16,17, 20,22	6,7,8,9,11,22	3
7	1,6,7,8,9, ,11,12, ,16,17,19,22,	1,2,3,4,5,6,7,8,9, ,11,16,17,19,20,21,22	1,6,7,8,9, ,11,16,17,19,22	
8	1,2,3,4,5,6,7,8,9, ,11,12, ,14,15,16,17,18,19,20,22	1,2,3,4,5,6,7,8,9, 11,14,15,16,17,20,21	1,2,3,4,5,6,7,8,9,11,14,15 ,16,17,20	
9	1,6,7,8,9,11,12, ,19,20,22	3,4,6,7,8,9, ,11,12,14,15,16,17,19,20,2 1,22	6,7,8,9,11,12,19,20,22	
11	1,2,5,6,7,8,9, ,11,12, ,14,15,16,17,18,19,20,21,22,	1,2,3,4,5,6,7,8,9, 11,15,16,17,19,22,	1,2,5,6,7,8,9, 11,15,16,17,19,22,23	
12	3,4,9,12,,14,15,16,18,19,20,22,	1,2,3,4,5,7,8,9,11,12,14,15 ,16,17,20,21	3,4,9,12,14,15,16,20	
14	2,4,5,8,9,12,14,15,18,20,21,	3,4,8,11,12,14,15,16,17,18 ,20,21,22,	4,8,12,14,15,18,20,21	
15	4,5,8,9, ,11,12, 14,15,18,19,20,21,22,	3,4,8,11,12,14,15,16,17,18 ,21,	4,8,11,12,14,15,18,21	
16	1,2,3,4,6,7,8,9, ,11,12, ,14,15,16,17,18,19,20,21,22,	1,7,8,10,11,12,15,16,19,20 ,21	1,7,8, 11,12,15,16,19,20,21	
17	1,2,6,7,8,9,10,11,12, ,14,15,16,17,18,19,20,22,	2,3,4,7,8, ,11,16,17,20	2,7,8, 11,14,16,17,20	
18	14,15,18,21,22,	3,8,11,12,14,15,16,17,18,2 1,	14,15,18,21,	
19	7,9,16,19,20,22,	3,7,8,9,11,12,15,16,17,19, 20,21	7,9,16,19,20,	
20	1,2,4,6,7,8,9,11,12, ,14,16,17,19,20,22,	3,4,8,9,11,12,14,15,16,17, 20,21	4,8,9,11,12,14,16,17,20,2 4	
21	3,4,7,8,9, 12, ,14,15,16,18,19,20,21,22	3,11,14,15,16,18,19,21	3,14,15,16,18,19,21,22	
22	5,6,7,9, 11,14,22,	1,2,3,4,5,6,7,8,9, ,11,12,14,15,16,17,18,19,2 0,21,22	5,6,7,9,11,14,22	3

Table 6-9 Partition of RM: Iteration 4

Measure	Reachability Set	Antecedent set	Intersection	Level
1	1,7,8,11,12,16	1,2,3,4,5,7,8,9,11,16,17,20	1,7,8,11,16	
2	1,2,7,8,11,12,17	2,4,5,11,14,,16,17,20	2,11,17	
3	1,,3,4,7,8,9, 11,12,14,15,17,18,19,20,21	3,8,11,14,16,17,20	3,8,11,14,17,20	
4	1,2,4,7,8,9, 11,12,14,15,17,20	3,4,8,12,14,15,22,	2,4,8,12,14,	
5	1,5,7,8, ,11,12	5,8,11,14,15,22,	5,8,11,	
7	1,7,8,9, ,11,12, ,16,17,19	1,2,3,4,5,6,7,8,9, ,11,16,17,19,20,21	1,7,8,9, ,11,16,17,19,	
8	1,2,3,4,5,7,8,9, ,11,12, ,14,15,16,17,18,19,20	1,2,3,4,5,7,8,9, 11,14,15,16,17,20,21	1,2,3,4,5,7,8,9,11,14, 15,16,17,20	
9	1,7,8,9,10,11,12,19,20	3,4,7,8,9, ,11,12,14,15,16,17,19,20,21	7,8,9,11,12,19,20	
11	1,2,5,7,8,9, ,11,12, ,14,15,16,17,18,19,20,21	1,2,3,4,5,7,8,9, 11,15,16,17,19,22,	1,2,5,7,8,9, 11,15,16,17,19,	
12	3,4,9,12,,14,15,16,18,19,20	1,2,3,4,5,7,8,9,11,12,14,15,1 6,17,20,21	3,4,9,12,14,15,16,20	
14	2,4,5,8,9,12,14,15,18,20,21,	3,4,8,11,12,14,15,17,18,20,2 1	4,8,12,14,15,18,20,2 1	
15	4,5,8,9,11,12, 14,15,18,19,20,21,	3,4,8,11,12,14,15,16,17,18,2 1	4,8,11,12,14,15,18,2 1	
16	1,2,3,4,7,8,9, ,11,12, ,14,15,16,17,18,19,20,21	1,7,8,10,11,12,15,16,19,20,2 1	1,7,8, 11,12,15,16,19,20,21	
17	1,2,7,8,9,10,11,12, ,14,15,16,17,18,19,20	2,3,4,7,8,11,16,17,20	2,7,8, 11,14,16,17,20	
18	14,15,18,21	3,8,11,12,14,15,16,17,18,21,	14,15,18,21	4
19	7,9,16,19,20	3,7,8,9,11,12,15,16,17,19,20 ,21	7,9,16,19,20	4
20	1,2,4,7,8,9,11,12, ,14,16,17,19,20	3,4,8,9,11,12,14,15,16,17,20 ,21	4,8,9,11,12,14,16,17, 20	
21	3,4,7,8,9, 12, ,14,15,16,18,19,20,21	3,11,14,15,16,18,19,21	3,14,15,16,18,19,21	

Table 6-10 Partition of RM: Iteration 5

Measure	Reachability Set	Antecedent set	Intersection	Level
1	1,7,8,11,12,16	1,2,3,4,5,7,8,9,11,16,17,20	1,7,8,11,16	
2	1,2,7,8,11,12,17	2,4,5,11,14,16,17,20	2,11,17	
3	1,3,4,7,8,9, 11,12,14,15,17,20,21	3,8,11,14,16,17,20	3,8,11,14,17,20	
4	1,2,4,7,8,9, 11,12,14,15,17,20	3,4,8,12,14,15,22,	2,4,8,12,14,	
5	1,5,7,8, 11,12	5,8,11,14,15,22,	5,8,11,	
7	1,7,8,9,11,12, 16,17	1,2,3,4,5,6,7,8,9, ,11,16,17, ,20,21	1,7,8,9,11,16,17,	
8	1,2,3,4,5,7,8,9,11,12, ,14,15,16,17, ,20	1,2,3,4,5,7,8,9, 11,14,15,16,17,20,21	1,2,3,4,5,7,8,9,11,14,15, 16,17,20	
9	1,7,8,9,10,11,12,20	3,4,7,8,9, ,11,12,14,15,16,17, ,20,21	7,8,9,11,12, 20	
11	1,2,5,7,8,9,11,12,14,15,16,17, ,20,21	1,2,3,4,5,7,8,9, 11,15,16,17,1,22,	1,2,5,7,8,9, 11,15,16,17,	
12	3,4,9,12,14,15,16,20	1,2,3,4,5,7,8,9,11,12,14,15,1 6,17,20,21	3,4,9,12,14,15,16,20	5
14	2,4,5,8,9,12,14,15,20,21	3,4,8,11,12,14,15, 17, 20,21	4,8,12,14,15, 20,21	
15	4,5,8,9,11,12, 14,15, 20,21	3,4,8,11,12,14,15,16,17, ,21	4,8,11,12,14,15, ,21	
16	1,2,3,4,7,8,9,11,12,14,15,16,17, ,20,21	1,7,8,10,11,12,15,16, ,20,21	1,7,8, 11,12,15,16, ,20,21	
17	1,2,7,8,9,10,11,12,14,15,16,17, ,20	2,3,4,7,8,11,16,17,20	2,7,8, 11,14,16,17,20	
20	1,2,4,7,8,9,11,12,14,16,17,20	3,4,8,9,11,12,14,15,16,17,20 ,21	4,8,9,11,12,14,16,17,20	
21	3,4,7,8,9, 12, 14,15,16,20,21	3,11,14,15,16, 21	3,14,15,16, 21	

Table 6-11 Partition of RM: Iteration 6

Measure	Reachability Set	Antecedent set	Intersection	Level
1	1,7,8,11,16	1,2,3,4,5,7,8,9,11,16,17,20	1,7,8,11,16	6
2	1,2,7,8,11,17	2,4,5,11,14,16,17,20	2,11,17	
3	1,3,4,7,8,9, 11,14,15,17, ,20,21	3,8,11,14,16,17,20	3,8,11,14,17,20	
4	1,2,4,7,8,9, 11,14,15,17,20	3,4,8,14,15,22,	2,4,8,14,	
5	1,5,7,8, 11,	5,8,11,14,15,22,	5,8,11,	
7	1,7,8,9,11, 16,17,	1,2,3,4,5,6,7,8,9, ,11,16,17, ,20,21	1,7,8,9,11,16,17,	6
8	1,2,3,4,5,7,8,9,11,14,15,16,17, 20	1,2,3,4,5,7,8,9, 11,14,15,16,17,20,21	1,2,3,4,5,7,8,9,11,14,15,16,17,20	6
9	1,7,8,9,10,11,20	3,4,7,8,9, ,11,12,14,15,16,17, ,20,21	7,8,9,11, 20	
11	1,2,5,7,8,9,11,14,15,16,17, ,20,21	1,2,3,4,5,7,8,9, 11,15,16,17,1,22,	1,2,5,7,8,9, 11,15,16,17,	
14	2,4,5,8,9,14,15,20,21,	3,4,8,11,14,15,17, 20,21	4,8, 14,15, 20,21	
15	4,5,8,9,11,14,15, 20,21,	3,4,8,11,14,15,16,17, ,21	4,8,11, 14,15, ,21	
16	1,2,3,4,7,8,9,11,14,15,16,17, ,20,21	1,7,8,10,11,15,16, ,20,21	1,7,8, 11, ,15,16, ,20,21	
17	1,2,7,8,9,10,11,14,15,16,17, ,20	2,3,4,7,8,11,16,17,20	2,7,8, 11,14,16,17,20	
20	1,2,4,7,8,9,11,14,16,17, ,20	3,4,8,9,11,14,15,16,17,20,21	4,8,9,11,14,16,17,20	
21	3,4,7,8,9,14,15,16, 20,21	3,11,14,15,16, 21	3,14,15,16, 21	

Table 6-12 Partition of RM: Iteration 7

Measure	Reachability Set	Antecedent set	Intersection	Level
2	2,11,17	2,4,5,11,14,16,17,20	2,11,17	7
3	3,4, ,9, 11,14,15,17, ,20,21	3, 11,14,16,17,20	3, 11,14,17,20	
4	,2,4, 9, 11,14,15,17,20	3,4, 14,15,22,	2,4, 14,	
5	5, 11	5, 11,14,15,22,	5, 11	7
9	9, 11,20	3,4, 9, ,11,12,14,15,16,17, ,20,21	9,11, 20	7
11	,2,5, 9,11,14,15,16,17, ,20,21	,2,3,4,5, ,9, 11,15,16,17,1,22,	,2,5, ,9, 11,15,16,17,	
14	2,4,5, ,9,14,15, ,20,21	3,4, ,11,14,15,17, 20,21	4, 14,15, 20,21	
15	4,5 ,9,11,14,15, 20,21	3, 4,11,14,15,16,17, ,21	,4,11,14,15, ,21	
16	2,3,4, 9,11,14,15,16,17, 20,21	1, ,10,11,15,16,20,21	11,15,16, ,20,21	
17	2,9,10,11,14,15,16,17,20	2,3,4,7,8,11,16,17,20	2, 11,14,16,17,20	
20	2,4, ,9,11,14,16,17,20	3,4 ,9,11,14,15,16,17,20,21	,4,9,11,14,16,17,20	
21	3,4, ,9,14,15,16, ,20,21	3,11,14,15,16, 21	3,14,15,16, 21	

Table 6-13 Partition of RM: Iteration 8

Measure	Reachability Set	Antecedent set	Intersection	Level
3	3,4, 11,14,15,17,20,21	3, 11,14,16,17,20	3, 11,14,17,20	
4	2,4,11,14,15,17,20	3,4, 14,15,22	2,4,14	
11	11,14,15,16,17,20,21	3,4,5,11,15,16,17,1,22,	11,15,16,17,	
14	4,14,15,20,21	3,4, ,11,14,15, 17,20,21	4,14,15, 20,21	8
15	4, ,11,14,15,20,21	3,4 ,11,14,15,16,17, ,21	4,11,14,15,21	
16	3,4,11,14,15,16,17,20,21	11,15,16,20,21	11,15,16,20,21	
17	11,14,15,16,17,20	3,4,7,8,11,16,17,20	11,14,16,17,20	
20	4, 11,14,16,17, 20	3,4,11,14,15,16,17,20,21	4,11,14,16,17,20	8
21	3,4,14,15,16, ,20,21	3,11,14,15,16, 21	3,14,15,16, 21	

Table 6-14 Partition of RM: Iteration 9

Measure	Reachability Set	Antecedent set	Intersection	Level
3	3,4, 11,15,17,21	3, 11,16,17	3, 11,17	
4	2,4,11,15,17	3,4,15,22	2,4	
11	11,15,16,17	3,4,5,11,15,16,17,22	11,15,16,17	9
15	4,11,15,21	3, 4,11,15,16,17, ,21	4,11,15,21	9
16	3,4,11,15,16,17,21	11,15,16,21	11,15,16,21	
17	11,15,16,17	3,4,7,8,11,16,17	11,16,17	
21	3,4,15,16, 21	3,11,15,16, 21	3,15,16, 21	

Table 6-15 Partition of RM: Iteration 10

Measure	Reachability Set	Antecedent set	Intersection	Level
3	3,4,17,21	3,16,17	3, 17,	
4	,2,4,17	3,4,22,	2,4,	
16	3,4,16,17,21	16,21	16,21	
17	16,17	3,4,7,8,16,17	16,17,	10
21	3,4,16, 21	3,16, 21	3,16, 21	

Table 6-16 Partition of RM: Iteration 11

Measure	Reachability Set	Antecedent set	Intersection	Level
3	3,4,21	3,16	3,	
4	2,4	3,4,22	2,4	11
16	3,4,16,21	16,21	16,21	
21	3,4,16, 21	3,16, 21	3,16, 21	

Table 6-17 Partition of RM: Iteration 12

Measure	Reachability Set	Antecedent set	Intersection	Level
3	3,21	3,16	3	
16	3,16,21	16,21	16,21	
21	3,16, 21	3,16, 21	3,16, 21	12

Table 6-18 Partition of RM: Iteration 13

Measure	Reachability Set	Antecedent set	Intersection	Level
3	3	3,16	3	13
16	3,16	16	16	

Table 6-19 Partition of RM: Iteration 14

Measure	Reachability Set	Antecedent set	Intersection	Level
16	16	16	16	14

The level identification process of these factors was completed in fourteen iterations (Tables 6-7 to 6-20). The identified levels for each factor (summarised in Table 6-21) help in developing the digraph of the final ISM framework.

Table 6-20 identified level of each factor

Level	Factor	Number
1	Lack of Shared decision-making	10
	Bureaucracy	13
2	Expertise	24
	Awareness	23
3	Different targets between partners	22
	Communication issues	6
4	Media	19
	Fragmentation on public land price	18
5	PPP model (off-plan)	12
6	Lack of commitment and collaboration	8
	Unstable legal framework	1
	Inadequate integration and coordination	7
7	Lack of third sector participation	5
	Misinformation	9
	Government guarantees	2
8	Cost and access to finance	14
	Delays	20
9	Trust Issues	11
	Demand uncertainty	15
10	Risk allocation	17
11	Lack of financial institution participation	4
12	Scale of PPP housing supply	21
13	Real estate developer capabilities	3
14	Time frame	16

6.2.6 Building an ISM Diagram

Based on the level of partition, an ISM diagram was developed, which represents a graphical representation of the elements, their hierarchical levels and directed relationships. The interrelationships between the different elements are identified by directional arrows representing the relationship direction. The following Figure 6-1 illustrates the final ISM framework.

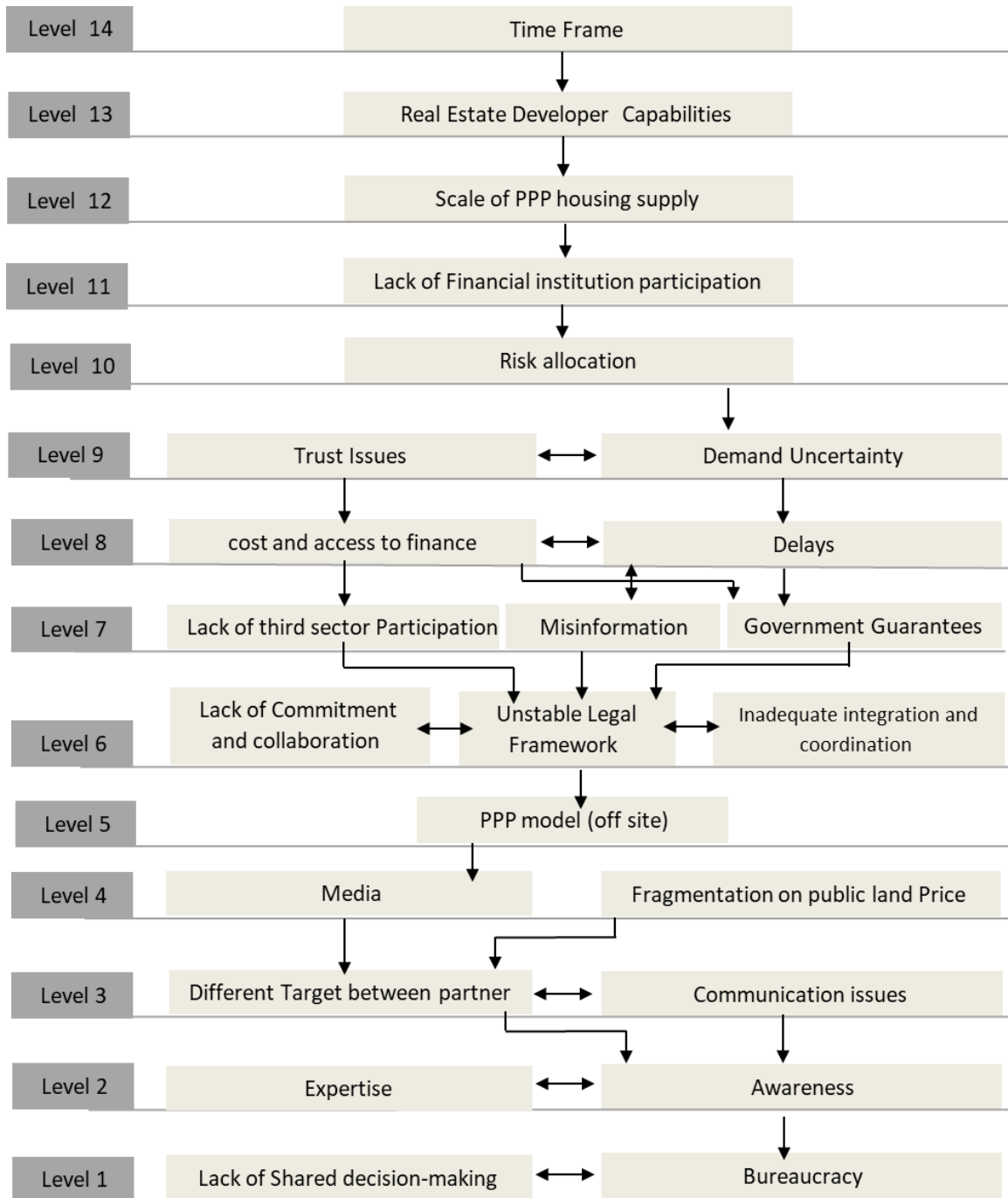


Figure 6-1 ISM based Framework

Figure 6-1 presents the digraph obtained from ISM, which sets out a hierarchy of factors that challenge the implementation of PPP in the Saudi housing sector. It should help managers and decision-makers in the Saudi housing sector to understand the relationship between the challenges, as it provides decision-makers and practitioners with a more realistic representation of the problem in the current implementation of PPP in the Saudi housing sector. A major contribution of this framework is found in the establishment of a single systemic structure to explain the contextual associations among the various factors identified. In addition, this reflects the main aim of this study, which is to understand how PPP could contribute towards improving the delivery of affordable housing for middle-income households, and to develop a framework for utilising PPP arrangements in Saudi Arabia.

The ISM framework represents 14 levels that are considered important for the better implementation of PPP in the Saudi housing sector. The ISM displayed that the key aspect that is considered to be of extreme importance, at level 14, is “time frame”. This element was shown to have a significant effect on “real estate developer capabilities” at level 13 of the ISM. Also, the “real estate developer capabilities” at level 13 have a significant impact on the “scale of PPP housing supply”, which has a relationship with “lack of financial institution participation” at level 11 of the ISM hierarchy. Furthermore, “lack of financial institution participation” is related to “risk allocation” on the following level (level 10).

Further importance would be given to “trust issues”, which are related to “demand uncertainty” at level 9 and affected by “risk allocation” from level 10. At level 8, “cost and access to finance” and “delay” are related to each other and influenced by the factors on level 9. Delay has a significant relationship with “misinformation” and “government guarantees” on the next level of importance, and “cost and access” is related to the “lack of third sector participation”. At level 6, three factors have the same level of importance and have influence on each other: these factors are “lack of commitment and collaboration”, “inadequate integration and coordination”, and “unstable legal framework”, which has relationships with the factors from level 7.

The next level of importance, level 5, is for “PPP model (off plan)”, which is related to the “unstable legal framework” factor from level 6, and also with “media” on level 4. The “fragmentation on the land price” has the same level of importance as “media” and both factors have significant relationships with “different targets between partners” at level 3. “Communication issues” are related to “different targets between partners” and has the same level of importance. Both components of level 3 have significant associations with “awareness” on level 2. In addition, “expertise” and “awareness” are related to each other at level 2. At the lower level of the ISM

hierarchy, two factors are related to each other: “lack of shared decision-making” and “bureaucracy”, which is influenced by “awareness” at level 2.

6.2.7 MICMAC Analysis - Factor Classifications

Having developed the final ISM framework and found the relationship between the factors, it is important to ascertain the degree of the relationships between these different factors. The utilization of the MICMAC principle, which stands for ‘Matrice d’Impacts croises-multiplication applique’ and classment (cross-impact matrix multiplication applied to classification) will be helpful to achieve this. MICMAC analysis is utilized to classify the factors and validate the ISM factors in the study in order to reach conclusions (Ahmad, Tang, Qiu, & Ahmad, 2019). Because the relationships between factors are not always equal, in that some relations may be stronger than others, MICMAC analysis is a step further to overcome this (Dewangan, Agrawal, & Sharma, 2015). MICMAC analysis is developed based on driving power and dependence power. From the final reachability matrix, the driving power is the sum of the binary digit “1” for each factor in the corresponding row, while the dependence power of each factor is obtained by the sum total of 1’s in the corresponding factor column.

Furthermore, based on the driving and dependence powers, MICMAC analysis explores the influence and dependence between issues and classifies them into four categories, namely autonomous, dependent, relay/linkage, and independent, as described below.

I. Autonomous factors: this category contains factors with weak driver power and weak dependence power. The factors in this category are relatively discounted from the system.

II. Dependent factors: factors which are located in this category have strong dependence power and weak driver power.

III. Linkage factors: this category contains factors with both strong driver and dependence power. Within this category, the factors are unstable due to the fact that any action on these factors will have an impact on others and also a feedback effect on themselves.

IV Independent factors: the factors in this category are called key factors, as they have strong driver power and weak dependence power.

All the identified factors have been obtained based on their driver power and dependence power, as shown in Table 6-22.

Table 6-21 Factors' driver power and dependent power

Number	Factors	Driving Power	Dependence Power
1	Unstable legal framework	11	12
2	Government guarantees	12	8
3	Real estate developer capabilities	20	5
4	Lack of financial institution participation	18	10
5	Lack of third sector Participation	12	7
6	Communication issues	8	14
7	Inadequate integration and coordination	15	17
8	Lack of commitment and collaboration	13	18
9	Misinformation	14	19
10	Lack of shared decision making	10	18
11	Trust Issues	21	17
12	PPP model (off plan)	14	16
13	Bureaucracy	16	11
14	Cost and access to finance	13	13
15	Demand uncertainty	16	11
16	Time frame	23	11
17	Risk allocation	20	10
18	Fragmentation on public land price	7	11
19	Media	8	13
20	Delays	18	13
21	Scale of PPP housing supply	17	7
22	Different targets between partners	10	21
23	Awareness	7	20
24	Expertise	9	17

Based on the above table, each factor is allocated as a point using the conventional x-y coordinate system, where x represents the dependence power and y represents driver power. For example, factor 3, “real estate developer capability”, has a driver power of 20 and a dependence power of 5: it is therefore allocated to category **IV**, which contains independent factors, and so on. The following figure (Figure 6-2) illustrates the classification of the 24 factors that are identified within this study based on the four MICMAC categories.

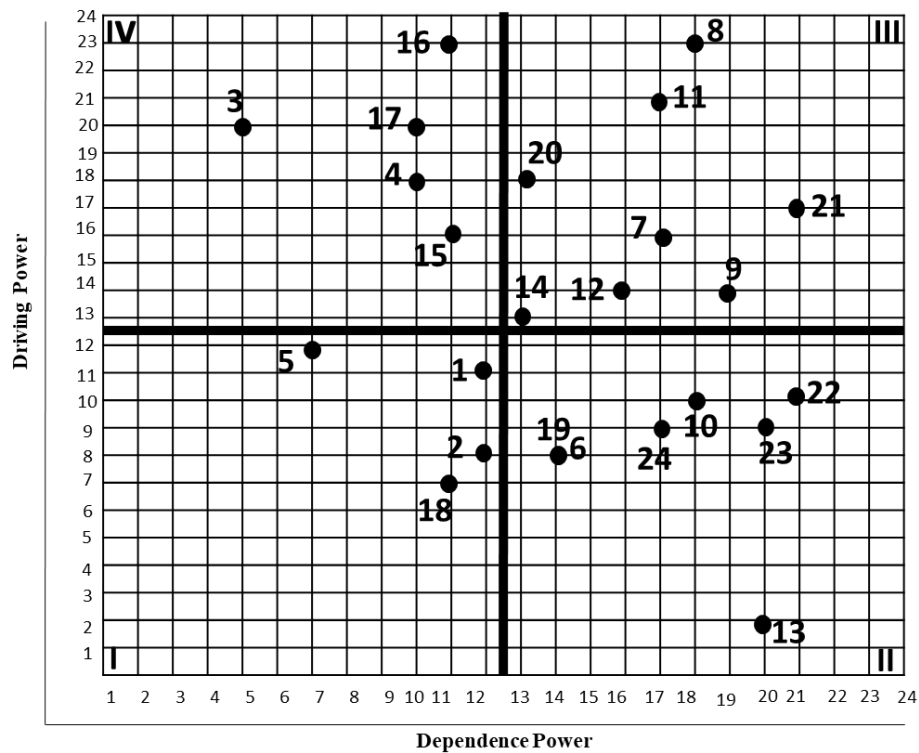


Figure 6-2 Driving Power and Dependence Diagram (MICMAK)

Figure 6-2, above, shows the four classification categories of challenges facing the implementation of PPP for the delivery of affordable housing for middle income groups in Saudi Arabia. The first category is Autonomous factors: the factors within this study that are located in this category are the following:

- Unstable legal framework
- Lack of third sector participation
- Fragmentation of public land prices
- Government guarantees.

These four factors act as Autonomous or Excluded factors, meaning that they have little influence and are just slightly dependent. These factors appear to be completely excluded from the ISM, because they do not take advantage of any major evolution and they can be consider secondary variables.

The second group of factors have strong dependent power and weak driving power. This category is identified as dependent factors. These factors are as follows:

- Lack of shared decision-making
- Communication issues

- Bureaucracy
- Awareness
- Media
- Different targets between partners
- Expertise.

These Dependent Factors have a little influence and are very dependent. In this, they are especially sensitive to the evolution of independent factors.

The third group of factors are the Linkage factors, which have both strong dependence and driving power, as follows:

- Cost and access to finance
- Trust issues
- Misinformation
- Lack of commitment and collaboration
- Inadequate integration and coordination
- Scale of PPP housing supply
- PPP model (off-plan)
- Delays.

Any intervention on these factors can have an impact on other factors as well as on themselves. This means that the system can be driven by these factors but depends on other variables.

The fourth category consists of Independent factors, which are considered as key factors. This category includes the following:

- Real estate developer capabilities
- Lack of financial institution participation
- Demand uncertainty
- Risk allocation
- Time frame.

These Independent factors are very influential and little dependent. Most of the system depends on these factors. In addition, these factors are identified as critical because they act according to how much they can control the system. They are also seen as entry elements into the system. In general, the system itself has no control over these factors. Therefore, collectively, they act as factors of inertia.

Examination of the MICMAC analysis indicates that independent factors such as real estate developer capabilities, lack of financial institutions' participation, demand uncertainty, risk allocation, and time frame, which are located at the top of the ISM hierarchy, have strong driving power and weak dependence power. Hence, decision-makers in Saudi PPP housing schemes should consider these factors and place high priority on tackling them, as they have the capability to influence other factors. They may be treated as the 'major factors' that challenge the implementation of PPP for the delivery of affordable housing for the middle income group in Saudi Arabia. On the other hand, autonomous factors that have both weak driver power and weak dependence include unstable legal framework, lack of third sector participation, fragmentation on public land price, and government guarantees. These factors are disconnected from the system, with which they have only few links, which may be strong.

Moreover, dependent factors have weak driver power but strong dependence power, which includes lack of shared decision-making, communication issues, bureaucracy, awareness, media, different targets between partners, and expertise. They are seen at the bottom of the ISM hierarchy (Figure 6.1). These factors represent the outcome to decision-makers of the Saudi PPP housing scheme. Finally, linkage factors with a strong driving power and strong dependence include cost and access to finance, trust issues, misinformation, lack of commitment and collaboration, inadequate integration and coordination, scale of PPP housing supply, PPP model (off-plan), and delays. These linkage factors are considered as unstable factors and very sensitive. Any action on these factors will lead to an impact on other factors and a feedback effect on themselves. Hence, decision-makers should take special care regarding these factors. Therefore, the output of the MICMAC analysis presented in this study may enable the management and the decision-makers who are responsible for the implementation of the Saudi PPP housing scheme to identify and classify the challenges (factors) based on the strength of their dependency and driving power, which affect the implementation of PPP in the Saudi housing sector.

6.3 Discussion of Study Findings

The details of the construction of this framework were provided in the previous section. In this section, the rationale for the proposed framework will be discussed based on the literature review and interview findings. Figure 6-1, presents 14 levels that are considered important for improving and enhancing the implementation of PPP in the delivery of affordable housing for middle income people in Saudi Arabia. The following sub-section is the discussion of the proposed framework based on ISM hierarchy.

6.3.1 Level 14: Time Frame

The time frame for the implementation of the Saudi PPP housing scheme has been identified as the most critical factor that affects current implementation. Within the adoption of the Saudi Vision 2030, the government set targets for every ministry and government agency, to be achieved by 2020 with the Saudi National Transformation Program: as a result, this limited time frame has a significant impact on the implementation of PPP in the Saudi housing sector. Respondent P6 emphasised that the implementation of PPP in the housing sector is very fast and the time for the implementation is very limited as a result of the implementation of the Saudi Vision 2030. As a result, those involved in the implementation of the PPP housing scheme are working, adjusting and learning at the same time as implementation. Moreover, respondent P12 asserted that the PPP housing scheme had started very fast. This was supported by other interview respondents: P2, P7, and P14 all identified the time factor as a challenge facing the Saudi PPP housing scheme.

This finding is in line with Muhammad and Abubakar (2019) study findings: they reported that the hasty implementation of the PPP housing project did not allow adequate time for implementation and left PPP the housing project without buyers due to a lack of the necessary infrastructure. In addition, Abdul-Aziz and Kassim (2011) also identified time as a critical factor affecting the PPP housing project, where reaching effective PPP housing contracts evolved through a process of trial and error, which was costly in terms of time. Therefore, this study demonstrates that the need for an adequate time frame for the PPP housing scheme is critical for successful implementation. The “time frame” factor has a significant relationship and impact on the “real estate developers’ capabilities” on the next level of importance in the ISM hierarchy, which will be discussed in the following section.

6.3.2 Level 13: Real Estate Developers’ Capabilities

For a successful PPP housing scheme, the existence of capable real estate developers is vital. The stronger the private partners within the PPP project, the more experience the project will gain, and that will be reflected in terms of designing and developing the project more efficiently and effectively with the optimum capital outlay structure design (Almarri & Boussabaine, 2017a). Furthermore, within the PPP project, a capable and strong private partner implies the ability of the private partner to possess the expertise and raise massive funds to execute PPP projects within budget and time frame (Osei-Kyei & Chan, 2017b).

Within the Saudi PPP housing scheme, the Ministry of Housing classifies the real estate developers identified as partners on the implementation of PPP housing projects with qualifying criteria, as

discussed in the document review in section 5.2.2, which emphasises that strong, capable first-class real estate developers are limited within the PPP housing scheme. Moreover, according to respondent P10, real estate developers are not yet ready to participate in mega-projects with thousands of housing units and the proposed PPP housing project beyond their ability, and this was supported by respondents P9 and P12. Therefore, this study found that real estate developer capabilities represent a challenge facing the implementation of the PPP housing scheme in Saudi Arabia.

This finding is in line with Kavishe and Chileshe's (2019) finding that a strong and capable private partner is one of the top three factors that influence the success of PPP projects. Also, Abdul-Aziz and Kassim (2011) found that a strong private partner is a factor that has a positive effect when they exist and a negative effect when absent. Another challenge that is correlated with "real estate developers' capabilities" is the scale of PPP housing supply, which will be discussed in the following section.

6.3.3 Level 12: Scale of PPP housing supply

Another challenge that is correlated with real estate developers' capabilities is the scale of PPP housing supply, which is allocated within the next level of importance on the ISM hierarchy. The aim of the adoption of PPP in the housing sector is to work closely with the housing market actors to bridge the gap between supply and demand and produce more supply of affordable housing. Similarly, the aim of adopting PPP in the Saudi housing sector is to increase the supply of affordable housing, reduce the cost, and motivate the private sector to develop new housing within a shorter time (Ministry of Housing, 2017). However, increasing the supply of affordable housing through the PPP is considered as a challenge. According to UN-Habitat (2006), in the great majority of PPP housing schemes, the number of low-income households reached is disappointingly small. The findings of this study from the document review in section 5.2.4 identify the contribution of the PPP housing project to the demand of housing in 2020, which indicates that the scale of the PPP housing project supply is limited in Saudi Arabia in comparison with the demand due to the earlier implementation of the PPP housing scheme.

In addition, respondent P14 emphasised that the output of PPP housing projects will not meet the housing need by 2020 and does not exceed 20% of the total demand for housing. Also, the limited concept of real estate development is a reason for the short supply of PPP housing, as identified by respondent P6: the traditional approach of real estate developers is to develop infrastructure for residential land and individual contracts to build different housing units. Moreover, respondents P6, P7, P8, and P14 agreed that the limited scale of the PPP housing scheme is due to the limited

capabilities of the real estate developers, and that this accordingly restricts the scale of the PPP housing project, presenting a further challenge.

This finding is in line with the findings of Sengupta (2006), who reported that the outcome of the PPP housing project is minuscule in terms of numbers of housing units in comparison to the demand. Likewise, Ibam (2010) found that the type and the number of housing units that are provided for each income class in the PPP housing provision schemes is limited. This was also supported by Ibam and Adowa (2012), who reported that housing production under PPP is yet to address the challenges of insufficient numbers of housing units and housing affordability for low-income earners. Furthermore, the limited scale of the PPP housing supply is correlated with lack of financial institution participation, which is allocated on the next level of importance in the ISM hierarchy, as will be discussed in the following section.

6.3.4 Level 11: Lack of Financial Institution Participation

The role of the financial institutions within the PPP housing scheme is vital, as one of the main objectives of PPP adoption in the housing sector is to relieve the government's financial burden. In addition, the availability of strong financial institutions for the PPP project is identified as a key factor that contributes to the success of the PPP housing scheme (Yuan et al., 2012). However, respondents P3, P5, P6, P10, and P12 in this study agreed that the Saudi PPP housing scheme is facing financial challenges, as financial institutions' participation is limited in providing funds for the PPP housing project. According to respondent P3, the financial institutions are reluctant to participate in the Saudi PPP housing scheme and are considered as a weak link in the implementation of the housing scheme. This is in line with the finding from Kavishe and An (2016) that the ability of the private financial institutions to finance large PPP housing projects is considered as challenge facing the success of the PPP.

In addition, respondent P9 asserted that Saudi commercial banks only provide real estate loans for existing constructed housing units: not for units that will be built in future, as in PPP. This is supported by Moskalyk (2011), who found that strict credit constraints have made banks and investors more cautious about taking on additional projects, which makes it harder to borrow money, and many governments struggle to secure revenue support streams for the PPP projects within the urban sector, which is considered to be high risk in some contexts.

Moreover, respondent P12 commented that the reason for the lack of participation of financial institutions in the PPP housing scheme in Saudi Arabia is the high risk that the financial institutions face from PPP housing. This is supported by the findings of Black (2014), who stressed that the

financer of the project and the real estate developer expect their financial return in terms of time, money and expertise and cover the assumed risk.

Therefore, this study identifies financial institutions' lack of participation in the Saudi PPP housing scheme as a challenge. Another related challenge is risk allocation, which is allocated on the next level of importance on the ISM hierarchy and will be discussed in the following section.

6.3.5 Level 10: Risk allocation

One of the main characteristics of the PPP is the sharing of risk between partners. According to Osei-Kyei and Chan (2015), one of the fundamental components and benefits of PPP arrangements is the allocation and sharing of risks among stakeholders. In addition, risk allocation has been identified as a significant factor to ensure the success of PPP in housing projects (Meckawy, 2014). In any PPP arrangement, risk should be allocated based on the capability of the partners to manage that risk and absorb the consequences with minimum financial impacts (Almarri & Boussabaine, 2017).

Within this study, respondents P2, P4, P5, and P6 agreed that even with the government's incentives and guarantees that are provided within the PPP housing scheme, the risk is still high. Respondent P6 stressed that execution risk is a challenge that real estate developers face: even if the Ministry of Housing establishes a backup plan, the risk is still high. In addition, respondent P4 stated that the demand risk is the highest risk that real estate developers have within the PPP housing scheme. This is in line with the finding of Abdelaziz and Kassim (2011), who identify sales risk as a major challenge that faces the PPP housing where the public agencies require their partner to take the sales risk.

Furthermore, respondent P2 stated that an unstable legal framework forms the basis of high risk for the real estate developers within the PPP housing scheme by emphasising that the various partners are expected to re-sign the same contract due to the updates made by the public agency, but the real estate developers face high risk, especially regarding the financial aspect. This is supported by Kwofie et al. (2016), who found that the major risk is that most legal arrangements on government projects are uncertain, as there may not be any valid signed agreements between the government and the partner.

Thus, the unstable legal framework and demand uncertainty are two reasons for the risk challenge for the implementation of PPP in the delivery of affordable housing for middle income households in Saudi Arabia. The next level of importance on the ISM hierarchy is for demand uncertainty, and trust issues, which will be discussed in the following section.

6.3.6 Level 9: Demand uncertainty and trust issues

House buyers' demand for the PPP housing project has a significant impact on the implementation of the Saudi PPP housing scheme and is considered as a challenge. The respondents within this study emphasised that the demand uncertainty is a challenge facing the implementation of the PPP housing scheme. Respondents P2 and P4 emphasised that the risk that real estate developers face is associated with demand uncertainty. This finding is in line with the findings of Muhammad and Johar (2018), who identified house buyer demand as a factor that has a significant effect on the success of PPP housing projects.

One reason for the demand uncertainty is lack of beneficiaries' awareness within the PPP housing scheme in Saudi Arabia. As stressed by respondent P3, beneficiaries' interest is in villas, for cultural reasons, as privacy for the household is high, but they cannot afford them. This is in agreement with the findings of Bahammam (2015), who reported that for social reasons, Saudi households are reluctant to live in some types of housing such as apartments, which are smaller and with lower cost, due to the shared entrances and joint spaces, which are considered as disadvantages. In addition, respondent P4 stressed that there are differences between beneficiaries' interests and their needs. This finding concurs with those reported by Engel, Fischer and Galetovic (2013) that house-buyers' choices and needs will affect the revenue stream for private partners in the PPP housing schemes.

Furthermore, the marketing for the eligible targeted segment for the PPP housing project within the Saudi PPP housing scheme is another reason for the demand uncertainty. This was confirmed by respondents P1, P2, P5, P7, and P14. The targeted segment of beneficiaries for the PPP housing scheme are not eligible within the cost range of housing units within the PPP housing project. This is in line with Parashar's (2014) finding that ambiguity prevails in the identification of beneficiaries: ensuring that the PPP housing units created are directed to the right beneficiaries is considered as a challenge facing the success of the PPP housing project.

In addition, respondents P2, P3, P6, and P7 identified a reason for the demand uncertainty, which is the process of the beneficiary's journey within the marketing stage of the PPP housing project, as they reserve a PPP housing unit before their bankability has been approved. This finding was also supported by the document review findings in section 3.8.2, Figure 3-15, where the beneficiaries reserve housing units before approval of funding is received. As a result, many reservations for PPP housing units will be cancelled. Moreover, lack of integration between the different Ministry of Housing programs is another reason for the demand uncertainty. Respondent P2 explained that the Ministry of Housing has three different programs – the PPP Housing Program

(SHARAKAT), existing housing units, and support for beneficiaries to buy from the market directly – and the lack of integration between these three different programs is a reason for the demand uncertainty of the PPP housing project.

Therefore, demand uncertainty has been identified as a challenge facing the implementation of the PPP housing scheme. At the same level of importance as demand uncertainty in the ISM hierarchy are trust issues, which will be discussed in the following paragraphs.

PPP can be seen as a collaborative arrangement based on mutual trust between the public and private sectors (Ibem & Aduwa, 2012). The importance of mutual trust is referred to as “Openness and constant communication” and has been emphasised in several PPP studies as a critical success factor (Osei-Kyei and Chan, 2015; Jacobson & Choi, 2008). In addition, fundamentally important to the functioning of the partnership will be its ability to build and maintain a deep level of trust among all partners and stakeholders. However, aligning the goals of the PPP and maintaining trust at a healthy level is difficult to achieve and maintain throughout the entire life-cycle of the PPP project (Moskalyk, 2011). However, one plausible consequence of the absence of trust is the early termination of the relationship between the private and public partners, which will lead to the early termination of PPP projects (Kafiash, 2019). When trust between the different PPP stakeholders is absent, the actors are likely to do as little as possible and the success of the PPP will be challenged (Klijn et al., 2010).

Lack of trust was found to be significant, as all the respondent of this study agreed that this factor is a challenge faced by the PPP housing scheme. This is in line with the findings of Muhammad and Johar (2018), in which trust was identified as a critical factor influencing the success of PPP housing projects. Furthermore, trust issues between different stakeholders in the PPP housing scheme in Saudi Arabia were identified and shown to be influenced by clear procedures to receive financial incentives and government guarantees, the lack of shared decision-making between different stakeholders, project announcement (media), inaccurate data related to the financial situation of the beneficiaries, mistrust from financial institutions, delays, and the PPP model adopted (off-plan), which jeopardised trust.

6.3.7 Level 8: Cost and access to finance, Delays

Cost and access to finance is another challenge facing the success of the PPP housing project. It is difficult to achieve and preserve the balance between profitability and affordability for the different stakeholders (and very few partnerships have managed to preserve a balance between these two). According to Gbadegesin et al. (2016), the effectiveness of PPP in housing is not

achieved as long as the low-income people cannot “acquire housing rights” from the PPP schemes, especially where lower income groups are particularly constrained in their ability to access mortgage finance and participate in the market (Cao & Keivani, 2014). For an affordable housing PPP project to achieve the desired affordability outcomes, it must include access to finance at below market interest rates, through a significant level of government subsidy (Mekawy, 2014).

Interview respondents P3, P4, and P8 agreed that the beneficiaries’ personal loans and credit cards will affect their ability to receive a PPP housing loan supported by the Ministry of Housing from the commercial banks, and this is related to financial institutions: in many cases the beneficiaries are not bankable and their applications for interest-free loans are rejected. This was also confirmed by respondent P7, who emphasised that if a PPP housing project is marketed for 6,000 beneficiaries, the number of bankable beneficiaries will not exceed 300. This is in line with Parashare’s (2014) finding in relation to the allocation and costs for the beneficiaries of the PPP housing project “purchase of units: given that their incomes are low, the authorities further find it difficult to facilitate loans, despite several low-interest housing schemes” (p.534).

Furthermore, delay is related to cost and access to finance and is on the same level of importance. According to respondent P6, delay in signing the funding agreement for the beneficiaries who reserve PPP housing units at the marketing stage is a challenge facing PPP housing and leads in some cases to cancellation of the reservation for a housing unit. This finding concurs with Biygautane et al. (2016), who found that excessive delays, which come at a considerable cost to the private sector, lead to cancellation at different operational stages and jeopardize trust.

Moreover, the delay in obtaining a licensing permit for the PPP housing project is a further challenge. From the document review in section 5.2.1.2 the current housing development process, which comprises six main steps involving public agencies from national and local level, is a reason for the delay. This process takes up to 730 days, compared with the international benchmark, which does not exceed 26 days. This indicates excessive delays, which may jeopardise trust and affect the success of PPP the housing scheme. Furthermore, according to P1, real estate developers within the PPP housing scheme receive licencing from all related government agencies within approximately six months, whereas the target is to receive it within few weeks. This finding is supported by Osei-Kyei, Chan, and Ameyau (2017), who stress that the licensing and approval process must be streamlined and fast, as unnecessary delays could affect parties’ commitment to the project.

6.3.8 Level 7: Government guarantees, misinformation, lack of third sector participation

The next level of importance in the ISM hierarchy consists of three challenges, as follows: government guarantees, misinformation, and lack of participation by third sector organizations. These three challenges will be discussed in turn below.

To ensure that a PPP project is economically viable, some forms of government guarantees should be considered within the implementation of the project, namely joint investment funding or supplemental periodic service payments in order to allow the private sector to cover the project costs and get reasonable profits and investment returns (Cheung et al., 2012). Where that guarantees aim to lower the risk taken by the private sector, raise the level of confidence of investors and lenders, and support the cash flows of the concessionaire (Li, Akintoye, Edwards, & Hardcastle, 2005). Moreover, the government is assumed to provide a level of guarantee that is high enough for the project to be economically feasible, but not low enough to burden the government and society for the benefits of the partnership (Takashima et al., 2010). According to respondents P2, P3, P6, P10, P11, and P13, to reduce the risk of investment in the affordable housing sector and enable the real estate private partners, the Ministry of Housing provided government guarantees within the implementation of the Saudi PPP Housing scheme. However, according to respondents P5 and P7, the mechanism for receiving those guarantees is not yet clear.

Misinformation is another serious issue, as information is one of the resources used by different partner on the PPP housing schemes to achieve the desire goal successfully. Information is a key component of resources, which include time, expertise, information, funding, land and building materials (Mekawy, 2014). According to Abdulazziz and Kassim (2011), information has positive associations with trust in the relationship between different PPP stakeholders: without trust, the parties do not share information, and without further sharing of information, trust cannot increase.

Within this study, respondents P1, P2, P3, P5, P7, P10, and P13 identified lack of information regarding the funding and financial institution as an issue that challenged the implementation of the PPP housing scheme in Saudi Arabia. According to respondent P7, within the PPP housing scheme, the agreements with financial institutions were change and updated due to a pre-existing agreement with the Ministry of Housing and the commercial banks. This finding is in line with Kavishe and An (2016), who reported similarly that misinformation on the financial capacity of partners in PPP housing projects challenges PPP housing projects' success.

Another problem with information is the accuracy of the data regarding the needs of the different region and beneficiaries' financial capabilities. According to respondent P5, the database that the

Ministry of Housing offers to the real estate developers is not accurate and cannot be relied on. This was also confirmed by respondent P1, who asserted that there is a problem with the identified targeted segment of the population within the PPP housing scheme. Also, in agreement with respondent P5, respondent P3 confirmed that the Ministry of Housing data is not accurate. This is in line with Hassan (2011), who found that a lack of availability of sufficient information regarding the beneficiaries' income and inhabitants' needs is critical to offer sustainable and suitable housing, and will prevent real estate developers from gaining an accurate estimation of real needs. Lack of third sector participation is a further challenge, as third sector organizations can play a significant role in the success of PPP for low-income housing, especially when poor people are exposed to private sector interest (Un-Habitat 2006). It has been proved that strong NGOs have the ability to mobilise poor communities and build their capacities by helping them to organise, articulate their needs, evaluate their resources, plan and implement their programmes, and maintain their homes (Mekawy, 2014).

From the document review in section 5.2.3, the PPP structure identifies the partners in PPP housing schemes and clarifies their role. It can be anticipated that there is no role for third sector organizations, including public participation and non-government organizations, within the implementation of the PPP housing schemes in Saudi Arabia. This concurs with the interview findings. According to respondent P4, there is no direct link between PPP housing projects and charity foundations or third sector organizations, but with every PPP housing project, a certain percentage of the PPP housing units are developed for the sake of low-income people. This finding concurs with Ibem (2011), who identified the absence of third sector organizations as a challenge that impacts the success of PPP housing schemes in meeting the needs of low-income people. All three identified challenges within this level of the ISM hierarchy are related to the unstable legal framework on the next level, which will be discussed in the following section.

6.3.9 Level 6: Unstable legal framework, lack of commitment and collaboration, and inadequate integration and coordination

A stable legal framework is critical for the implementation of the PPP, as it sets the policies, rules and regulations for the developed PPP housing scheme. The government is expected to provide a stable legal framework for the implementation of PPP in the housing sector, which will help to ensure strong private sector participation in PPP for the delivery of affordable housing. According to Farquharson and Yescombe (2011), private sector investors inevitably critically analyse the legal framework (and regulations) and its ability to ensure the effectiveness of long-term PPP

contracts. Moreover, a fair and efficient legal framework is a key factor for successful PPP project implementation (Cheung et al., 2012).

The legal framework for Saudi PPP housing schemes has not been finalized and is not yet stable. According to participant P5, the legal framework for PPP implementation for the delivery of housing is unstable and is updated frequently, on a weekly basis. This also was confirmed by respondent P8, P9, P10, P11 and P14. This finding is supported by the findings of N. Kavishe and Chileshe (2019), who identified a lack of an adequate policy and legal framework as one of the critical factors in the PPP in the success of affordable housing schemes. In addition, an inadequate legal/regulatory framework is the root of low levels of commitment (Yuan et al., 2012).

To achieve the benefits from PPP, long-term commitment and collaboration between the different stakeholders is vital and is considered as a basic feature of PPP. The development and operation of PPP in affordable housing requires different stakeholders to establish collaborations across sectors such that they play different roles but work together to achieve the desired goal (Davidson, 2016). Public commitment is a directed responsibility from the public sector to the private sector to perform certain actions so as to bring about a certain state of affairs. However, public sector behaviour and its commitment to the development of PPP housing is influenced by the incentives that are provided to the private sector by the broader institutional environment, macro policies, and the specific agreements in the contract (Koppenjan & Enserink, 2009).

Within the findings of this study, respondents P2, P3, P5, P6, P7, P9, P11, P12, and P14 emphasised that the lack of financial institutions' commitment and collaboration is a challenge facing the Saudi PPP housing scheme. According to respondent P12, real estate developers sign contracts with banks to finance PPP project beneficiaries, but banks do not finance them. Also, respondent P11 stressed that the collaboration of the financial institutions is the main challenge within the PPP housing schemes in Saudi Arabia because the projects are financed from the beneficiaries' loans. This concurs with the finding by Kavishe and An (2016) that a number of private partners were facing financial difficulties after the start of the project, which led to delays, poor performance and unsuccessful delivery of the PPP housing projects.

Furthermore, lack of public commitment in providing financial incentives for the private partner was identified as a challenge: according to respondent P2, when the real estate developer reaches the stage of receiving the financial incentives, these incentives are not forthcoming. This finding is line with Muhammad and Johar (2018), whose study revealed that the government's lack of commitment to provide incentives for the private sector has been identified as one of the problems which ultimately affected the success of the PPP housing project.

Inadequate integration and coordination, established coordination and integration among project participants denotes a cordial and positive long-term relationship between the PPP stakeholders (Osei-Kyei, Chan, Javed, et al., 2017). A wide range of public agencies are involved in providing clearances, approvals, licences, and permits at various stages of the housing process. Without coordination and integration, there will be delay and duplication, which presents an obstacle to the success of PPP (Un-Habitat-2006).

The interview respondents reflected that there are two main issues within the integration of the PPP housing scheme. The first issue is the lack of integration between the PPP housing scheme and other Ministry of Housing programs. According to respondent P14, there are challenges in the integration between the different Ministry of Housing administration and programs even if the goal is the same. This was also confirmed by respondent P2, who emphasised that the existing housing unit program was realised at the same time as the marketing of the PPP housing project, which lead to cancellation of reservations for PPP housing units.

The second issue is the lack of integration between the various related government housing agencies within the PPP housing scheme. According to respondent P14, it is challenging to coordinate and integrate with other related housing government agencies. This is in keeping with the findings from the document review in section 5.2.1.2 that the current housing development process, which is presented in six main steps and involves public agencies from national and local level, suffers delays as a result of lack of commitment and collaboration between the various related government agencies. The findings corroborate the study by Ibem (2011), who found that lack of proper coordination and integration of the activities of various public agencies related to housing could hinder the productivity and efficiency of PPP in housing provision.

6.3.10 Level 5: PPP model - off plan

Off-plan purchasing has been recognized as a new approach for buying properties: due to the increasing population and increasing demand for housing, real estate developers are selling off-plan homes – these are properties/homes that are being sold in advance of their completion (Galliard Homes, 2018). Within this approach, consumers are buying homes that are still under construction, based on trust in the information provided from the real estate developer through advertisements, unlike already built houses that prospective consumers can visit in person, computer-generated images (CGIs) are used to present and simulate what these homes will look like in future (Kieu & Mogaji, 2018).

From the findings of the document review in section 5.2.1.1, the Ministry of Housing applies a Wafi or off-plan program, which is adopted as a model for the implementation of the PPP in order to sell the housing units at an earlier stage after their design or during construction. The end user purchases the property before it is built and PPP housing projects are funded from the beneficiaries' loans. Furthermore, according to respondent P3, beneficiaries will refuse to pay for the housing units from their interest-free loans and wait three years to receive their PPP housing unit. Respondents P4, P8, P10, P12, P13, and P14 concurred with this. In addition, according to respondent P7, the final beneficiary does not trust that they will receive housing units after three years within the PPP scheme. This study demonstrates that the adoption of an off-plan model within the PPP housing scheme in Saudi Arabia influences the demand uncertainty and raises the issue of trust. Within the ISM hierarchy, the off-plan PPP model is correlated with media on the next level of importance, which will be discussed in the following section.

6.3.11 Level 4: Media and fragmentation on public land price

The complex decision-making involved in buying a house is acknowledged; however, advertisements (media) still play an important role in such decision-making. Specially, within the off-plan model adopted, these houses are still being built and they may take years to be ready, meaning that information to reassure purchasers and convey trust is important. In terms of the provision of information regarding the facilities provided in the house, the room sizes and the pricing should be true and not misleading or over-promising (Kieu & Mogaji, 2018). However, the negative media lead to negative public perceptions and reduced demand for the PPP project (Johnston & Gudergan, 2007).

This research identified that the announcement of the PPP project through the media is a reason for the lack of trust between different partners in the implementation of the PPP housing scheme. This was experienced by respondents P1, P2, P3, P5, and P6, who agreed that the announcement of the PPP housing project by the Ministry of Housing promised that beneficiaries would receive their housing units within two years through the off-plan model adopted within the PPP housing scheme, but the actual development on the ground had not yet started. According to respondent P2, final beneficiaries received advertisements through the media that thousands of housing products would be delivered, but there was nothing on the ground. This is in line with the study findings of Johnston and Gudergan (2007), who reported that a negative media impact will result in negative public perceptions and will lead to reductions in demand for the PPP project and potentially further exacerbate the negative situation.

At the same level of importance as the influence of the media is the fragmentation of public land. Within the PPP housing scheme, the government has a vital role in providing access to land in order to increase the capacity of the private sector to deliver decent and affordable housing (Ibem, 2010). Moreover, to achieve the desired affordability outcomes through the implementation of the PPP, access to land must be at below market rates (Mekawy, 2014). However, the estimated value of public land for PPP housing projects in Saudi Arabia is not below the market rate. According to respondent P2, the PPP housing units would be more affordable if the Ministry of Housing reduced the price of the public land for the developed PPP housing project for middle-income people, and the price could be more attractive for private partners if the Ministry did not estimate at the market price. Both fragmentation on public land price and the influence of the media are related to different targets between partners, which is on the next level of importance.

6.3.12 Level 3: Different targets between partners and communication issues

The goals of the public sector fundamentally oppose those of the private sector: the private sector focuses on economic gain, while the public sector strives to protect the community's interest through regulation and minimization of risk. If these different goals remain unmanaged, they can cause friction and mistrust between the partners in the PPP (Moskalyk, 2011). In addition, a private partner, with the goal of economic gain and making profits, will only participate in and contribute to a PPP project that can provide a reasonable rate of return; for projects that have great economic and/or social value but are not financially viable, the government may provide necessary supports and/or guarantees to make them financially viable for the private partner (Kwak et al., 2009).

Within this study, differences in goals between different stakeholders have been identified as a challenge to the implementation of the PPP housing scheme in Saudi Arabia, as confirmed by respondents P2 and P4. According to P4, the challenge is the gap between the different partners' goals: real estate developers seeks maximise their profit, while the Ministry of Housing aims to meet the demand and the target number of beneficiaries, and to accommodate all the candidates on the beneficiaries' list. This is in line with N. Kavishe et al. (2018) finding that different goals between partners present a challenge that influences the implementation of PPP for affordable housing.

Furthermore, differing targets between partners are related to the communication issues on the same level of importance. Communication between different partners within the PPP housing scheme is vital and is one of the critical factors that influence the output of the PPP scheme. A lack of communication or miscommunication flowing from decision-making can lead to

misunderstanding between PPP partners. If left unchecked, this could result in communication breakdowns, which may reduce the level of trust that partners have in each other's motives and impact on operational productivity (McCann et al., 2013). However, ensuring that every stakeholder is linked to an adequate channel of communication that provides accurate project data and reliable information in a timely manner is instrumental to build effective relationships and trust between different stakeholders of the PPP project (Moskalyk, 2011).

As found from the interviews, the PPP unit assigns a relationship manager for every real estate partner within the PPP housing scheme to work as a communication channel between the public and private partners; however, the efficiency and limited authority of the relationship managers is a challenge. According to respondent P7, the loop of communication is a challenge faced by relationship managers within the PPP unit, who have no idea about the PPP project financier, as this is related to another department of real estate development found in the Ministry of Housing. If the head of the department communicates with other departments, the speed of the process, the time frame and the quality of the action that they take might differ, so the communication intersection between different departments within the Ministry of Housing is a challenge. This finding regarding the impact of lack of communication on the PPP housing scheme is in line with Muhammad and Johar (2018) finding that a lack of proper communication among different stakeholders of the PPP housing project is a challenge for successful implementation.

6.3.13 Level 2: Expertise and Awareness

One strategy that constitutes a problem for the successful implementation of PPP projects is the lack of skills by the public sector personnel with regard to the technicalities involved in the application of PPP (Okoye & Tennyson 2012). The PPP professionals should be responsible for things such as process control, regulation, negotiation, operation, and risk management (Kwak et al., 2009). However, the lack of skills and expertise will eventually result in poor PPP project management and poor planning of the PPP project, as well as poor risk identification, allocation and management (N. Kavishe et al., 2018).

The average experience within PPP ranged from one to two years (section 5.3.2). This can be attributed to the recent nature of PPP implementation in Saudi Arabia, starting with the implementation of the Saudi Vision 2030 where the government shifted from direct providers to work with the market actors in the housing sector through PPP. Also, from the interview findings, expertise has been identified as a challenge to the implementation of the PPP housing scheme in Saudi Arabia. According to respondent P6, the actors of the PPP unit in the Ministry of Housing

have not been in this situation before, so they learn from their mistakes and are still building their expertise. Also, respondent P3 emphasised that the human capital within the PPP housing unit is important and should be considered. This concurs with Muhammad and Abubakar (2019) finding that inadequate expertise within the public sector for monitoring and controlling private developers has limited the success of the PPP housing scheme.

A related factor at the same level of importance as expertise in the ISM hierarchy is awareness. The creation of awareness from the host government will help to ensure community support for the PPP project (Yong, 2010). According to Mekawy (2014), building and increasing community awareness is one of the factors that can enhance the implementation of PPP for the delivery of affordable housing. The interview respondents in the present study also noted that within the implementation of the PPP housing scheme, there is a lack of awareness regarding beneficiaries' needs and capabilities, and about the off-plan model for the delivery of affordable housing for middle income people. According to respondent P3, public awareness is needed, as there is gap between the beneficiaries' interests and their needs: households are interested in villas, but their financial capabilities are limited. There is also a lack of awareness regarding the implementation of the off-plan model, as confirmed by respondents P8, P12, P13, and P14. This finding supports that of N. Kavishe et al. (2018), who reported that awareness regarding PPP is a challenging factor facing the implementation of PPP in housing projects. Awareness is correlated to two factors on the next level of the ISM hierarchy – bureaucracy and lack of shared decision-making – which will be discussed in the following section.

6.3.14 Level 1: Bureaucracy and lack of shared decision-making

PPPs should not be regarded as a true partnership, as the actual collaboration between the public and private partners in terms of joint action and decision-making is very low (Reynaers, 2014). Furthermore, within the implementation of PPP for the delivery of affordable housing, sharing the decision-making, even with third sector organizations, is vital. Ibem and Aduwa (2012) argued that the expansion of PPPs to include third sector organizations that represent low-income people in the decision-making process in PPP housing schemes is important to ensure that the PPP strategy addresses the low-income earners' housing needs. According to Mekawy (2014), an effective sharing of decision making will lead to the success of the PPP housing scheme.

The interview respondents identified lack of shared decision-making between different partners as a challenge facing the implementation of the PPP housing scheme in Saudi Arabia. According to respondent P6, the private sector's involvement in decision-making is limited, especially regarding

the financial institutions: the public sector deals with financial institution without sharing with real estate developers, and this is a challenge, as PPP partners should share such decisions. However, respondent P8, P9, P10, P11, P12, P13, and P14 noted that the PPP unit committee holds workshops to share the decisions with PPP housing stakeholders. In contrast, respondent P11 stated that generally, the decisions come from the Ministry of Housing and the workshops are committed to taking stakeholders' viewpoints, but mainly the decisions are made by the public. This finding is supported by Biygautane et al. (2018), who reported that the structure of decision-making has a significant impact on the effectiveness of the implementation of PPP, especially if the decisions are made by senior government officials and small groups of political elites. Lack of shared decision-making is related to bureaucracy, which will be discussed next.

Effective bureaucracy is essential for PPP policy design, since the interaction of the political parties, tradition, and attitudes may affect the design and implementation of PPP, especially in developing countries (Khanom, 2010). According to Savage and Dasgupta (2006), bureaucratic complexities are high within the development of urban infrastructure, due to the overlapping roles and responsibilities of different state government and urban local bodies. Within the implementation of PPP in the housing sector, an efficient approval process that assists the stakeholders in a very tight timeframe has been identified as a critical success factor (Muhammad & Johar, 2018).

From the document review of this study (section 5.2.1.2), bureaucracy has been found to be a challenge for the development of the PPP housing project in Saudi Arabia. The current housing development process involves six main steps that include public agencies from national and local level: it does not reflect a streamlined approval process for housing development and its bureaucracy is identified as a challenge facing the current development of PPP in the housing sector, taking up to 730 days, compared with the international benchmark, which does not exceed 26 days. This finding is supported by Biygautane et al. (2018), who found that the outcome of lengthy bureaucratic processes is excessive delays, which have considerable impact on the private sector and may lead to the cancellation of PPP projects. Furthermore, the interview findings confirmed that bureaucracy is rife, and affects the sharing of decision-making, the integration and coordination between the various government agencies, as well as communication between different partners. Respondent P8, P11, P13, P14 agreed that government bureaucracy still exists within the implementation of the PPP housing scheme in Saudi Arabia.

Therefore, this section discusses the findings of this study based on the sequence of the importance of the challenges facing the implementation of PPP for the delivery of affordable housing for

middle income people in Saudi Arabia, as represented in the ISM based framework in Figure 6-1. The following section will represent the validation process of the proposed framework.

6.4 Validation of the proposed framework

For this research, data triangulation was utilized with two sources of data (document review and semi-structured interviews). In addition, the focus group and the development of the ISM can be considered as validation for the challenges identified within this research. Two focus groups were held to discuss the findings of the research with experts from the Saudi housing sector. Moreover, to increase the validation of the research findings, the researcher sought the judgment of stakeholders in PPP in the housing sector in Saudi Arabia. The validation of the framework aims to confirm that the proposed measures would contribute towards improving the implementation of PPP for the delivery of affordable housing for middle-income households in Saudi Arabia.

A second round of in-depth semi-structured interviews was utilized as a validation tool with respondents from the top management level of stakeholders in PPP in the Saudi housing sector, who would be affected by the application of the study's proposed framework. The total number of interviews conducted was four, as the researcher achieved data saturation at this point. The participants in this validation process are listed below in Table 6-23.

Table 6-22 Justification for Identified Stakeholders

Respondent	Code	Stakeholder	Justification
Project director	V1	Private - Real estate developer	Selected for his role on the PPP housing scheme as one of first real estate developers to participate in the PPP housing scheme as well as one of the first PPP housing projects that will be delivered
Senior relationship manager	V2	Public - National Housing Company PPP unit	Selected as one of top-level management on the PPP unit with responsibility for the implementation of the Saudi PPP housing scheme.
Supervision-and quality assurance	V3	Private - Consultant	Selected for his experience as a consultant of two PPP housing projects
Director	V4	Public - Ministry of Housing	Selected for his role in policy-making and managing the Wafi program, which works as a policy maker for the PPP unit

The respondent interviews were conducted face to face at different times and locations. Initially, a summary of the research was presented, and the framework developed in the study was discussed. Table 6-24, below, shows the respondents' feedback on the acceptance of the proposed framework.

Table 6-23 Validation Response

Questions	Respondents			
	V1	V2	V3	V4
Do you find the framework presented useful?	Yes, it presents the current challenges	Yes, but it needs a sub-model to make it real	Yes, it is useful	Yes
What are the advantages of the framework?	It represents the case of the challenges that face the implementation of PPP in housing in Saudi Arabia. If they solve these problems and provide the mechanism with consideration of the flow of the problem, as suggested on the framework, the PPP housing project will be achieved and become alive and the PPP housing scheme will be success. "If these problems are solved, PPP in housing will be a success in Saudi."	The framework focusses on providing a holistic picture of the current situation of the implementation of PPP in the Saudi Housing sector. It summaries all the challenges in one page.	Easy way to analyse the defects Logical and realistic matrix	Represent the current situation The direction of flow of the factors is realistic
What is the disadvantage of the proposed framework?	Lack of third sector participation as a factor does not exist: it should be discounted from the framework because this is not relevant in the case of PPP in housing in Saudi Arabia. You should consider this	None.	Number of levels is large	None
Do you think the framework could enhance the implementation of PPP in the delivery of affordable housing in Saudi Arabia?	Yes. If this framework were to be taken seriously, PPP implementation in the housing sector would be enhanced and the scheme would be a success.	Yes	Sure, it will specify the clear solutions for the implementation of PPP in the delivery of affordable housing in Saudi Arabia	Yes, if this framework were implemented.

Based on the above table, the feedback on the framework received from the respondents was positive. All the interviewed respondents agreed that the framework presents current situation of the challenges faced by PPP in the delivery of affordable housing for middle income groups. The respondents were also optimistic that if the framework were adopted, it would solve and enhance the current implementation of the PPP housing scheme. Moreover, the acceptance of the framework by all respondents was high. Respondents emphasised the advantages of the framework, indicating that it was realistic and logical. The framework is focused and provides a holistic picture of the current situation in the implementation of PPP in Saudi housing.

However, some comments were received from respondent V1 regarding “lack of third sector participation” as a factor in the developed framework, suggesting that this factor is not relevant to the current practice of the Saudi PPP housing scheme. The framework only suggests that third sector participation in the PPP housing scheme will help to achieve the desired goal, as it exists as a vital factor in the literature, even if the current practice does not include third sector parties as main actors in the implementation of PPP for the delivery of affordable housing for middle income groups in Saudi Arabia. On the comment that the 14 levels in the developed framework is a large number, as emphasised by respondent V3, the number of levels is determined using the systemic approach of the ISM, as explained in section 6.2 (based on the final reachability matrix developed in step four, in which ISM factors are partitioned into different levels).

Overall, the respondents agreed that the framework is representative and achievable and would be accepted by the different stakeholders in the PPP housing scheme in Saudi Arabia. All the respondents believed that the framework can enhance the implementation of PPP in the delivery of affordable housing for middle income groups in Saudi Arabia. Respondent V1 stressed that “If this framework were taken seriously, PPP implementation in the housing sector would be enhanced and the scheme would be a success.”

6.5 Summary

Interpretive Structural Modelling (ISM) was utilized as a tool to develop the hierarchical structure of challenges that face the implementation of PPP in the delivery of affordable housing for middle income households in Saudi Arabia. The proposed ISM and the MICMAC analysis identified the nature and the degree of the interrelationship of 24 factors, which were allocated to 14 levels of importance in the ISM hierarchy. In addition, MICMAC analysis was applied to classify the challenges based on their driving and dependence power. The most critical factors that are identified in the ISM framework are real estate developer capabilities, lack of financial institutions' participation, demand uncertainty, risk allocation, and time frame, which are located at the top of the ISM hierarchy and have a critically significant impact on PPP implementation in the housing sector. On the other hand, unstable legal framework, lack of third sector participation, fragmentation of public land prices, and government guarantees are factors that have limited impact on the implementation of PPP in the housing sector. A discussion of the findings based on the ISM hierarchy, the finding from the literature review, document and interview findings were also presented in this chapter. The chapter concluded with a discussion on the validation process to confirm the proposed framework, as reflected in experts' opinions of the interrelationships between the challenges.

CHAPTER VII– Conclusions & Recommendations

7 Conclusion and Recommendations

7.1 Introduction

Up to this point, the chapters in this thesis have paved the way to an understanding of how PPP could contribute towards improving the delivery of affordable housing for middle-income households in Saudi Arabia. The key findings from this study will be revisited according to the research objectives in order to draw conclusions from the entire study. In addition, this chapter will provide recommendations on improving the implementation of PPP in the Saudi housing sector, as well as highlighting the contributions to the current body of knowledge, related to the implementation of PPP in the housing sector. Furthermore, this chapter will also include the limitations of this research and the researcher's reflection on future work.

7.2 Accomplishment of the research objectives

The aim of this research was to understand how PPP could contribute towards improving the delivery of affordable housing for middle-income households, and to develop a framework for utilising PPP arrangements in Saudi Arabia. In order to achieve this aim, the following objectives were addressed:

1. To critically review PPP definitions and concepts and its implementation in the development of affordable housing.
2. To evaluate the current delivery mechanism for affordable housing in Saudi Arabia, in order to identify the critical issues.
3. To identify and examine the critical factors that could enable the application of PPP arrangements for the development of affordable housing.
4. To evaluate the challenges that would influence the implementation of PPP in the development of affordable housing in Saudi Arabia.
5. To develop and validate a framework for the effective implementation of PPP arrangements for the development of affordable housing in Saudi Arabia.

The following sub-sections will explain how each objective was addressed in order to achieve the aim of this research.

7.2.1 Research objective 1: To critically review PPP definitions and concepts and its implementation in the development of affordable housing.

The first objective is concerned with identifying the definition and concepts of PPP and its related implementation in the development of affordable housing. The researcher carried out a comprehensive literature review in order to gain an understanding of PPP and its concept. The concept of PPP is multi-disciplinary, so based on disciplinary or professional ideologies, it has been subjected to different definitions and interpretations. As a result, there is still no shared definition of PPP. Table 2-7-1 shows a summary of various definitions of PPP within the literature. However, this study highlights the main components of PPP as discussed in section 2.2.2.

As part of accomplishing the first research objective, this research highlighted why PPP is emerging as a mechanism for the delivery of affordable housing. PPP has emerged in the development of affordable housing as a response to market failure: governments have adopted PPP as an enabling approach in order to work closely with housing market actors. Within the adoption of the enabling approach, governments seek to transfer their role from direct providers to monitors of the housing sector. Through PPP, governments seek to bridge the gap of increasing demand, to provide technical expertise, to cover financial deficits, to encourage innovation, to use expertise from the private sector, and to gain earlier delivery of housing projects. The utilization of PPP for the delivery of affordable housing was discussed in section 0.

7.2.2 Research Objective 2: To analysis the current delivery mechanism for affordable housing in Saudi Arabia, in order to identify the critical issues.

In order to fulfil this objective, the researcher firstly provided a comprehensive review of literature on some of the characteristic aspects of Saudi population growth, Saudi housing demand and supply, and the Saudi government's housing program. Through the literature review, the study highlighted different programmes implemented by the Saudi government in order to support the provision of affordable housing for low- and middle-income households. These include: Real Estate Development Funds, Ministries' public housing programmes, Land Grant programmes, Charity foundations, and Ministry of Housing Programmes. Each of these delivery mechanisms has been discussed in Section 3.4. However, this study highlighted the shortage of the demand for affordable housing in Saudi Arabia, which has greatly increased since 1990.

The researcher also highlighted various challenges facing the Saudi housing sector. The literature has represented several factors that contribute to the challenge of affordable housing in Saudi Arabia, and these factors can be identified from both the supply and the demand side of housing.

Within the demand side, the factors that contribute to housing demand include increasing population and demography, income and availability of mortgages, and people's taste and lifestyle. On the other hand, the factors that affect the supply side include land, capital, labour, and entrepreneurialism, zoning and planning regulations, as set out in Tables 3-2 and 3-3. Furthermore, as presented in the literature and published in Government reports, the housing sector in Saudi Arabia is related to various government ministries and agencies, several of which have been cancelled or replaced by other agencies. Furthermore, this study highlighted the key events that have influenced housing development in Saudi Arabia, as illustrated in Figure 3-8. Within the new adoption of the Saudi Vision 2030, PPP has been utilized as a mechanism for the delivery of affordable housing in Saudi Arabia. The government's role has shifted from a direct provider to partnership with housing market actors within the enabling approach, as discussed in Section 3.7.

7.2.3 Research Objective 3: To identify and examine the critical factors that could enable the application of PPP arrangements for the development of affordable housing.

The third objective was concerned with investigation of the factors that influence the implementation of PPP for the delivery of affordable housing. To fulfil this objective, the researcher firstly provided a review of literature on the implementation of PPP in the housing sector in an international context. The findings from the international review suggested that in countries where it is implemented in the housing sector, PPP has produced different results and is influenced by different factors. Despite the differences in economic and socio-political characteristics between different countries, PPPs have performed differently in the provision of housing.

Furthermore, this research highlighted and discussed different factors that influence the implementation of PPP for the delivery of affordable housing. The various factors identified were explained by the element of Interorganizational Relationships (IOR), which helps to describe the relationship between the private and the public sector and to categorise the various identified factors discussed in section 2.6. These factors have been divided into three categories as follows: A) factors related to Actors (enabling environment, legal framework, government guarantees, existence of third sector partners in the PPP housing scheme, capable real estate developer, availability of financial market, and existence of expertise); B) factors related to the Network (integration and coordination, sharing information, communication, commitment and collaboration, trust, bureaucracy, media influence, and shared decision-making among the partners); C) factors that are related to the Project (scale and replicability, cost and access of the

poor, risk sharing, demand uncertainty, and time frame of the PPP housing project implementation). Based on the identified three categories, the conceptual framework presented in section 2.8 guided the researcher and directed investigations at the data collection stage.

7.2.4 Research Objective 4: To evaluate the challenges that would influence the implementation of PPP in the development of affordable housing in Saudi Arabia.

The fourth research objective was concerned with investigating the factors that influence the implementation of PPP for the delivery of affordable housing for middle income households in Saudi Arabia. To do so, a document review was carried out and fourteen face-to-face semi-structured interviews were conducted with partners from both the public and the private sector within the Saudi PPP housing scheme.

Chapter 4 provided detailed descriptions on the adoption of the research design, research methodology, and data collection techniques. This chapter also defined the procedures and principles of the logical processes that were applied in the study and were used to attain the aims and objectives of the research.

Furthermore, 24 factors were identified as key challenges that face the current practice of the implementation of PPP for the delivery of affordable housing for middle income people in Saudi Arabia. These different factors were analysed based on thematic analysis, which has been built on the three themes identified above – Actors, Network, and Project – as follows. The first theme, Actors, consists of the following factors: unclear mechanism for receiving financial incentives, unstable legal framework, limited real estate developers' capabilities, lack of financial institution participation, and absence of the role of third sector organizations from both public and charity foundations. These factors are illustrated in Figure 5-10.

Within the second theme, Network, a number of factors were identified. These included communication issues due to government bureaucracy and the limited authority of relationship managers within the PPP unit, and inadequate integration and coordination among different government agencies related to housing development, as well as between the different Ministry of Housing programmes; the lack of commitment and collaboration from the financial institutions and lack of commitment in providing financial incentives for the real estate developers within the PPP housing scheme; and misinformation regarding the beneficiaries' income facing the financial institutions within the PPP housing scheme. Moreover, the second theme also included bureaucratic hurdles and different targets between different stakeholders within the PPP housing scheme, as well as inadequate sharing of decision-making between different stakeholders.

Furthermore, trust issues accrued for several reasons, as follows: lack of commitment and collaboration from financial institutions, real estate developers' failure to receive financial incentives within the PPP housing scheme, government guarantees, unstable legal framework, project announcement (media), inaccurate data related to beneficiaries' financial situation, the PPP model adopted (off-plan), delays, and inadequate sharing of decision-making. Figure 5-13 illustrates the factors related to the second theme of this study.

Within the third theme, Project, several factors were identified, namely cost and access to finance, demand uncertainty, scale and replicability, time frame, and risk allocation. Figure 5-16 illustrates the factors related to the third theme. Furthermore, a detailed analysis of the factors that are challenging the current practice of the Saudi PPP housing scheme was provided in Chapter 5 and illustrated in cognitive map Figure 5-18. Fulfilling this objective has made a valuable contribution to achieving one of the major tasks of this research.

7.2.5 Research objective 5: To develop and validate a framework for the effective implementation of PPP arrangements for the development of affordable housing in Saudi Arabia.

The final objective of this study concerned developing a framework that can be utilized by the decision-makers within the Saudi PPP housing scheme and answer the main question of this study: How could PPP contribute to better development of affordable housing in Saudi Arabia? Interpretive Structural Modelling technique (ISM) was utilized as a tool to develop the hierarchical structure of factors that challenge the implementation of PPP in the Saudi housing sector. This has helped in achieving the final research objective, which is concerned with developing a framework for effecting PPP implementation for the development of affordable housing in Saudi Arabia. Section 6.3 discussed the detailed procedure of the development of the ISM based framework.

Furthermore, the developed ISM framework, shown in Figure 6.1, and the subsequent MICMAC analysis, have helped to identify the degree and nature of the interrelationship between the 24 factors that challenge the implementation of PPP in the Saudi housing sector. The MICMAC analysis classified the factors based on four categories. The first category was related to Autonomous factors which had little influence, and included four factors (unstable legal framework, lack of third sector participation, fragmentation on public land price, and government guarantees). The second category comprised dependent factors, which have a little influence and are very dependent, and included seven factors (lack of shared decision-making, communication issues, bureaucracy, awareness, media, different targets between partners, and expertise). The third

category comprised the linkage factors (cost and access to finance, trust issues, misinformation, lack of commitment and collaboration, inadequate integration and coordination, scale of PPP housing supply, the off-plan PPP model, and delays) – any effect on these factors will lead to effects on the other factors and on themselves. The fourth category included independent factors (real estate developer capabilities, lack of financial institution participation, demand uncertainty, risk allocation, and time frame). Those factors have been found to have the highest independency (driving power): they strongly affect all other factors that challenge the implementation of PPP in the delivery of affordable housing in Saudi Arabia. Furthermore, based on the ISM hierarchy, a detailed discussion of the study findings was provided in Section 6.4.

Furthermore, as part of accomplishing the last research objective, there was a need to validate the proposed framework of this research. A validation exercise was thus conducted with the main stakeholders of the Saudi PPP housing scheme, including a real estate developer (private partner), representatives from the National Housing Company (PPP unit) and the Ministry of Housing (policy-maker), and a consultant. The research received positive feedback from the stakeholders, as set out in Section 6.6, which discussed the validation process of the proposed framework. The feedback from the respondents is presented in Table 6-25. By developing and validating the proposed framework, the final objective of this research is completed. The next section will discuss the research contribution.

7.3 Research Contribution

This research adds to the existing knowledge of PPP and contributes to the knowledge of practise of PPP in the delivery of affordable housing. Specifically, this research adds information to the limited literature on the implementation of PPP in the housing sector. Furthermore, this study helps to understand how PPP could contribute to better development of affordable housing. Identification of the various challenges associated with the implementation of the PPP housing scheme is an essential step to reach its functionality, especially given that the Saudi PPP housing scheme is in the initial stage of implementation. Problem identification is subsumed under 'problem assessment'. Throughout this research, the challenges faced in the current implementation of the PPP housing scheme have been evaluated using qualitative methods in order to reach a rich and in-depth understanding of these challenges through document review to reflect the current situation of implementation, and semi-structured interviews with top management-level stakeholders from both public and private partners of the Saudi PPP housing scheme. An ISM-based framework helps to categorize and identify the relationships between the different

associated challenges that face the current practice of the implementation of PPP in the Saudi housing scheme. Thus, the evaluation of the challenges and tracing of the relationships between them will enable decision-makers within the housing sector to plan crucial steps in solving identified challenges and will form the bases for any planned interventions to achieve successful PPP implementation in the housing sector in Saudi Arabia.

This study has investigated how the functionality of PPP could be reached from the bases of Actors, Networks, and Projects. The important contribution of this study is that it proposes a framework that can be utilized to understand the key factors that are challenging the implementation of PPP in the housing sector and the interrelationship between these factors. So, the study provides an analytical approach to the implementation of PPP for the delivery of affordable housing. Although several prior studies have investigated the factors that influence the implementation of PPP in the housing sector (Abdul-Aziz & Kassim, 2011; Ibem 2011; Kwofie et al., 2016; Muhammad & Rimi Abubakar, 2019), no study to date has investigated the implementation of PPP within the housing sector in the Saudi context. Therefore, this research is the first of its kind in Saudi Arabia, where the aim is to understand how PPP could contribute towards improving the delivery of affordable housing for middle-income households, and to develop a framework for utilising PPP arrangements.

In terms of practical contributions, through the investigation of the current practice and the perspectives of the different stakeholders within the PPP housing scheme, this study can help housing policy-makers to understand the challenges and the relationship between these challenges and provide a more realistic representation of the problem in the current implementation of PPP in the housing sector. This research has developed a framework that can be utilized to improve the implementation of PPP as a mechanism for the delivery of affordable housing. More specifically, by using the findings presented in this study, the PPP unit within the Saudi Ministry of Housing can utilize the proposed framework and outline an action plan to address the various challenges that face the current practice.

7.4 Recommendations for Decision-Makers

In order to improve the provision of affordable housing through PPP, the following are recommendations for the effective utilization of PPP as a mechanism for the delivery of affordable housing based on the three identified themes: Actors, Network, and Project.

Actors: the availability of strong, reputable stakeholders within the Saudi PPP housing scheme will lead to the success of the PPP housing project. Decision-makers should develop mechanisms

to attract reputable developers to the PPP housing scheme and ensure that the private sector partners are financially capable and technically competent to deliver the PPP housing projects. Moreover, an effective mechanism should be developed to attract more financial institutions, which could contribute to the effective implementation of PPP for the delivery of affordable housing for middle income households and help to deliver housing units on a large scale. Furthermore, consideration of third sector participation in the PPP housing scheme is vital, especially where the target is to deliver affordable housing. The participation of third sector organizations will enhance the affordability of the PPP housing scheme, especially where middle- and low-income groups are exposed to private sector interest, and may provide financial resources for the provision of housing for middle- and low-income people.

As part of the public Actor role, housing sector decision-makers should consider stabilization of an adequate legal framework for the PPP housing scheme, as this will increase the capacity of the private sector to deliver decent and affordable housing. The frequent updates to the legal framework for the PPP housing scheme are a challenge facing PPP stakeholders. Furthermore, it is essential to ensure that there is strong in-house expertise to administer PPP housing projects, as well as adequate practices for hiring outside experts on technical, legal, and financial matters. The availability of adequate PPP expertise within PPP housing units will help to ensure the success of the PPP housing scheme.

Network: within the network between different PPP stakeholders, the government should build trust between the different stakeholders in the PPP housing scheme by addressing the reasons for trust issues as follows:

- Establish shared decision-making between different stakeholders within the PPP housing scheme;
- Provide clear procedures for the private partners to receive financial incentives;
- Increase government guarantees;
- Increase the public partners' commitment to the PPP housing scheme.

In addition, the integration between the different departments within the Ministry of Housing and different government agencies that are related to housing must be enhanced in order to improve the enabling environment for the private partners in the PPP housing scheme. Moreover, the government has to streamline the approval process for the development of the PPP housing project and enhance the quality of public administration. Efforts should be intensified by the various

government agencies responsible for housing through PPP to eliminate the bureaucratic impediments by removing any obstacles to housing provision.

Furthermore, the availability of information and the accuracy of the beneficiaries' data should be enhanced, which will help to identify the target segment of the PPP housing project, enhance demand and build trust between partners. In addition, the public sector expressly grants the private partner extensions in respect of delays to the commencement of operations that are attributable to lack of finance or demand uncertainty during the construction phase.

Synchronous communication should be established to relax the hierarchical lines of management communication, as well as to enhance communication channels between the different partners within PPP housing schemes in order to ensure the flow of information, increase the trust between different partners and avoid delays. The government needs to gain public support through consideration of the creation of awareness, especially regarding the benefits of the off-plan approach. In addition, the government may need to be proactive in order to protect its reputation through strategic awareness-raising initiatives or other means of direct action to overcome the challenge of negative media attention.

Project: decision-makers must set the target and the time frame for the PPP housing project based on the capabilities of the identified partners. In addition, the proposed scale of the PPP housing scheme should consider the capabilities of the real estate developers and the existence of the financial institutions within the PPP housing scheme. The appropriate risk allocation and risk sharing among the different partners of the PPP housing scheme should be reconsidered based on the various partners' ability to manage that risk cost-effectively: this is essential to ensure the scheme's success.

Moreover, the decision-makers within the PPP housing scheme should manage the demand risk, as demand uncertainty is a major challenge faced in the PPP housing projects, and address the reasons for this demand uncertainty by considering the following:

- Increase the beneficiaries' awareness: this is essential, especially regarding the model adopted by the PPP, which is off-plan purchasing.
- Identify the bankable target segment of the beneficiaries that are potential buyers for the proposed PPP housing project within their capabilities.
- Streamline the beneficiaries' journey and determine their bankability before the reservation of the PPP housing unit.
- Reduce and consider the influence of project announcements (media), and provide accurate data related to the beneficiaries' financial situation.

Furthermore, the government should work to enhance the affordability of the PPP housing products and ensure access to finance. The cost of the PPP housing units could be made more affordable for the beneficiaries by providing more support for the real estate developer regarding exemption of labour visas, licensing fees, marketing fees, value-added taxes, and the cost of delivering services and infrastructure. Moreover, the government should ensure the beneficiaries' access to private finance and increase public sector support for the financial institutions in order to streamline the beneficiaries' access to the PPP housing scheme by enabling appropriate types of loan and credit and financial schemes that are suitable for low and middle income households, as well as ensure the social benefits and deliver sufficient economic returns for financial institution partners.

7.5 Research Limitations

No study is without limitations, and it is important to acknowledge these here. Three limitations of this research are identified as follows:

- There is very limited literature that focuses on the implementation of PPP within the housing sector.
- In conducting this research, the researcher sought access to a wide range of documents that explain the current practice of PPP in the Saudi Housing sector. However, the researcher was not allowed access to material such as project files and other internal procedural documents. Despite this limitation, the researcher obtained related information through the experience of the respondents.

7.6 Recommendations for Further Research

Based on the findings of this research, the researcher considers that this study is the first step to future research. The following recommendations can be made for further research:

- Future research work can focus on extensive funding and financing mechanisms for PPP within the housing sector.
- Further research can investigate more fully the impact of the off-plan mechanism that is adopted within the PPP housing scheme in Saudi Arabia.
- This research examines PPP at the strategic level. Further research could focus on the implementation of PPP more specifically at the PPP housing project level.

- In response to the positive feedback regarding the proposed framework of this study, further research could consider the possibility of testing the proposed framework within the actual PPP unit within the Ministry of Housing in Saudi Arabia.
- This research centred on PPP housing within the context of Saudi Arabia; further research could compare the findings of this study to other countries with similar characteristics, such as those within the Gulf Cooperation Council (GCC).
- This study investigates the implementation of PPP in the Saudi Housing sector at an earlier stage of implementation. For future research, the possibility of conducting a longitudinal study for the implementation of PPP in the Saudi housing sector is recommended.

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APPENDIX

Appendix I Publication

HOUSING POLICIES AND PROGRAMS: A PRESENT IN LIGHT OF SAUDI VISION 2030

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Abstract: Saudi Arabia has experienced a high population growth with a high urbanization rate that has reached 80% resulting in an upsurge in the demand for housing and sharp increases in land prices and construction costs, particularly in urban areas. Saudi Arabia has introduced policies and programs to meet housing needs. This paper aims to discuss housing policies and program in Saudi Arabia as presented in the literature and published government reports before and within Five Year Development Plan until the present to have a comprehensive understanding of the housing sector in Saudi Arabia. Additionally, the paper will draw some conclusions and make some recommendations to meet the Saudi Vision 2030 concerning the needs in the housing sector.

Keywords: Housing Policies and Programs, Kingdom of Saudi Arabia, Saudi vision 2030.

1. INTRODUCTION

Saudi Arabia consists of thirteen regions with a total area of 2,250,000 square kilometres. In the late 1940s the process of urbanization in Saudi Arabia started with the commercial production of oil (Al-Hathloul & Edadan, 1991). One of the major results of the oil discovery has been a massive increase in population especially in urban areas, which is reflected by the combined effect of a natural increase, a larger foreign work force, and migration from rural to urban areas in search of employment opportunities and improved living standards (Huang, 1985). Population growth is one of the essential factors affecting the housing need. Saudi Arabia has one of the highest birth rates in the region and its population has massively increased, rising from 7.01 million in 1974 to 22.67 million in 2004. In 2009, the population was 25.37 million, and in 2016 it was 31,742,308 people (Central Department of Statistics and Demographics, 2016). The population growth and size has implications on policy making to strengthen the public utility and service provision (Abdul Salam, Elsegaey, Khraif, & Al-Mutairi, 2014). Since the foundation of the Kingdom of Saudi Arabia in 1932, the government has implemented several housing programs and policies to ensure housing delivery. The main goal of the Government Housing Policy is to provide citizens with safe, and suitable accommodations (Al-Otaibi, 2006). This paper aims to discuss housing policies and programs in Saudi Arabia as presented in the literature and published government reports before and within Five Year Development Plan until the present in order to have a comprehensive understanding of the housing sector in Saudi Arabia. Additionally, the paper will draw some conclusions and make some recommendations to meet the Saudi Vision 2030 concerning the needs in the housing sector.

2. BEFORE THE FIVE-YEAR DEVELOPMENT PLANS 1932-1970

In 1932, King Abdulaziz unified the country as a new state. This new nation had no infrastructure or technology and its industrial base was non-existent. It also had no modern social, medical or educational institutions. There were shanty settlements in the central and

Appendix II Pilot Study

Before Pilot Study	Developed within Pilot Study										
<p>Section I – Profile of participants</p> <table border="1"> <thead> <tr> <th>Name</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td>Name of the Organization</td> <td></td> </tr> <tr> <td>Job Title</td> <td></td> </tr> <tr> <td>Nature of Work</td> <td></td> </tr> <tr> <td>Years of Experience</td> <td></td> </tr> </tbody> </table>	Name	Date	Name of the Organization		Job Title		Nature of Work		Years of Experience		<p>Added</p> <p>Public Private</p> <p>Qualification</p> <p>In PPP In housing development</p>
Name	Date										
Name of the Organization											
Job Title											
Nature of Work											
Years of Experience											
<p>Introduction</p> <p>1. What are your views on using PPP as a mechanism for the delivery of affordable housing in Saudi Arabia?</p>	<p>No Change</p>										
<p>Section II – Actors in PPP in the Saudi Housing sector</p> <p>1. What are your views on the benefits of different stakeholders? Are those benefits ensured?</p> <p>2. Is there any role for the third sector within the current PPP implementation?</p> <p>3. What are your views on the balance between affordability and cost within the PPP project?</p>	<p>Added</p> <p>Who are the stakeholders within the Saudi PPP housing scheme?</p> <p>Removed from this section To section IV</p>										
<p>Section III – Networks between different actors</p> <p>1. What are your views on the relationship between different partners in the PPP?</p> <p>2. What are your views the integration and coordination within the PPP implementation?</p> <p>3. What are your views on the challenges in the relationships between different stakeholders within the PPP implementation?</p>	<p>Clarification</p> <p>What are your views on the following?</p> <p>the availability of information between different stakeholders</p> <p>the commitment between different stakeholders</p> <p>level of trust between different stakeholders</p> <p>sharing the decision-making between stakeholders</p>										

Before Pilot Study	Developed within Pilot Study
Section III – Networks between different actors	<p>Reword</p> <p>2. What are your views on the integration and coordination between the different stakeholders within the PPP implementation?</p>
Section IV – PPP Housing project	<p>Removed from this section</p> <p>To section II</p> <p>Reword</p> <p>what are your views on the scale of the PPP housing project in comparison to the total demand in Saudi Arabia?</p>
<p>Conclusion</p> <p>1. What are your views on the current performance?</p> <p>2. What are the key challenges to the current performance of PPP in the housing sector?</p> <p>3. In order to meet the Saudi Vision 2030, how can the implementation of PPP improved?</p> <p>Thank You.</p>	No Change

Appendix III Ethical Approval Letter



Research, Innovation and Academic
Engagement Ethical Approval Panel

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21 April 2017

Mubarak Alhajri

Dear Mubarak,

RE: ETHICS APPLICATION ST1617-74 - The Role of Public Private Partnership in increasing Affordable Housing in Saudi Arabia

Based on the information you provided, I am pleased to inform you that your application ST1617-74 has been approved.

If there are any changes to the project and/ or its methodology, please inform the Panel as soon as possible by contacting S&T-ResearchEthics@salford.ac.uk

Yours sincerely,

Anthony Higham