

**FACTORS INFLUENCING THE READINESS OF
THE PUBLIC AND PRIVATE SECTORS TO
IMPLEMENT PUBLIC-PRIVATE
PARTNERSHIPS IN DEVELOPING
AFFORDABLE HOUSING IN
YEMEN**

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LIST OF ABBREVIATIONS

Symbol	Definition
PPPs	Public - Private Partnerships
MPWH	Ministry of Public Works and Highways
NGO	Non-Government Organizations
BTS	Build Then Sell
RI	Readiness Index
K MO	Kaiser-Meyer-Olkin
MSA	Measure of Sampling Adequacy
PCA	Principal Component Analysis
BOT	Build- Operate -Transfer
BOOT	Build- Operate - Own - Transfer
BOO	Build- Operate – Own
HCB	Housing Credit Bank
PDRY	Public Democratic Republic of Yemen

**FAKTOR-FAKTOR YANG MEMPENGARUHI KESEDIAAN SEKTOR-
SEKTOR AWAM DAN SWASTA DALAM MELAKSANAKAN
PERKONGSIAN AWAM-SWASTA DALAM MEMBANGUNKAN
PERUMAHAN MAMPU-MILIK DI YEMEN**

ABSTRAK

Bukti-bukti yang ada menunjukkan bahawa penggunaan sistem yang baru seperti perkongsian awam-swasta atau PPP mampu mengurangkan beban kewangan kerajaan dan pembangunan perkhidmatan awam. PPP telah dilaksanakan secara meluas di seluruh dunia dan ia telah menjadi satu isu penting dalam beberapa kajian yang telah dijalankan. Namun, penggunaan PPP dalam menggalakkan perumahan mampu-milik di negara-negara sedang membangun seperti Yemen masih tidak dapat dikenalpasti. Oleh ini, kajian ini bertujuan untuk menilai sejauh mana sektor-sektor awam dan swasta bersedia menggunakan sistem PPP. Ia juga ingin mengkaji faktor-faktor yang mempengaruhi dan yang menentukan atau meramal kesediaan untuk melaksanakan PPP. Teori kesediaan telah digunakan untuk membangunkan model faktor kesediaan PPP. Borang soal selidik telah diedarkan kepada 232 organisasi di bandar-bandar utama Yemen. Data dianalisis menggunakan analisis deskriptif, analisis faktor, analisis korelasi dan analisis regresi berganda. Sebanyak 201 soal selidik yang dikembalikan boleh digunakan; menatijahkan kadar maklumbalas sebanyak 86%. Agensi-agensi kerajaan dan sektor-sektor swasta didapati bersedia untuk menggunakan PPP di Yemen. Satu korelasi positif dan kukuh dipaparkan melalui faktor-faktor yang mempengaruhi dan indeks kesediaan PPP. Faktor organisasi (i.e., struktur, budaya dan sumber) dan faktor-faktor luaran (sokongan luaran, kesediaan pasaran dan ketidakpastian alam sekitar) telah menyumbang secara signifikan bagi menjelaskan 53.9 % varian kesediaan untuk

menggunakan PPP di Yemen. Faktor budaya dalam organisasi tidak signifikan dalam meramal indeks kesediaan PPP. Akhir sekali, faktor-faktor luaran (sokongan luaran, kesediaan pasaran dan ketidaktentuan alam sekitar) menjadi peramal-peramal utama kesediaan untuk melaksanakan PPP di Yemen.

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ABSTRACT

Evidence shows that the adoption of a new system such as public– private partnerships PPPs mitigates the financial burden for governments and development of public services. PPPs have been extensively implemented worldwide and have become a vital issue in several studies. The adoption of PPPs to promote affordable housing in developing countries such as Yemen remains unknown. Therefore, this study aims to assess the extent of readiness of the public and private sectors to adopt PPPs. It likewise intends to examine the factors that influence and those that determine or predict the readiness to adopt PPPs. Readiness theory has been adopted to construct PPPs readiness factors model. A questionnaires were distributed to 232 Yemeni organizations in major cities. Data were analysed using descriptive analysis, factor analysis, correlation analysis and multiple regression analysis. A total of 201 useable questionnaires were returned, which yielded a 86 % response rate. Government agencies and private sectors are found to be ready to adopt PPPs in Yemen. A positive, strong correlation was indicated between the influencing factors and the PPPs readiness index. Organisational (i.e., structure, culture and resources) and external factors (external support, market readiness and environmental uncertainty) significantly contributed to the explanation for 53.9 % of the variance readiness to adopt PPPs in Yemen. Organisational culture factor was not significant in predicting the PPPs readiness index. Finally, external factors (external support, market readiness and environmental uncertainty) were the main predictors for readiness to adopt PPPs in Yemen.

CHAPTER ONE :

INTRODUCTION

1.1 Introduction

The principal issue in the debate on the development of affordable housing pertains the process of increasing the supply of such housing through a closer partnership between the public and private sectors. The potential partnership between the public and private sectors in the development of affordable housing is based on the shortcomings of previous efforts to address the housing shortage of the poor and low-income groups. Neither the public nor the private sectors have sufficient resources to address the housing problem. Public–Private Partnerships PPPs are an innovative method proposed by housing scholars to boost the supply of affordable housing. In this partnership arrangement, the public sector will provide incentives to facilitate housing development, whereas the private sector will invest its funds into housing and infrastructure projects. This chapter describes the background of the problem, which motivates the researcher to conduct the study. The chapter starts by providing an overview of the housing problem in Yemen. The chapter subsequently discusses the inability of the government to provide funding for housing development, which necessitates the use of PPPs to facilitate such development. The following sections outline the objectives, research questions, scope and significance of the study, as well as the organisation of the thesis.

1.2 Background of the Problem

Housing plays a vital role in the life of any community. It affects both the social and economic lives of the people (Sinha, 1978). Bordignon (1998) highlighted the

colossal magnitude of the housing problem in developing countries, which is attributed to the high rate of poverty, unemployment and increasing cost of housing and land. This problem results in the establishment of squatter settlements surrounding many urban centres in the developing countries. Governments in these developing countries have exerted efforts over the last three decades to address the housing problem by providing adequate, affordable and sustainable housing to their people; however, these efforts have failed because of the inadequate resources in providing houses to people, especially the low-income groups (UNHS, 2003; Ong and Lenard, 2003).

Neither the governments nor the private sector can provide adequate housing to the people. Thus, a relationship should be developed among the public and the private sectors, the public funding institutions and the society to maximize cost efficiencies (Ong and Lenard, 2003; Moore and Skaburskis, 2004). Housing and shelter are considered basic human needs, as well as among the human rights. Housing and shelter are integrated in the economy; aside from being social requirements, housing and shelter expand the construction industry, create employment opportunities and contribute to capital formation (Mayo et al., 1986). Rapid growth in many cities in the developing countries strains the capacity of their shelter delivery systems. Governments have selected a variety of implicit and explicit policies to ameliorate these strains. However, these policies are not necessarily consistent with their objectives due to the lack of knowledge on how housing markets work and how policies can affect and become constrained by market behaviour (Mayo et al., 1986). Similar to several developing countries, Yemen faces a tremendous shortfall in housing provision and budget constraints. Population growth played a significant role

in the high demand for housing. The population has increased from 15,804,665 in 1994 to 16,500,000 in 1997, to 19,607,000 in 2002 and to 20,727,063 in 2005, as reported by the National Center for Information (2007). The population growth rate of Yemen was 3.7% in 1994 (World Bank, 2000) and 3.5 % in 2005 (National Center for Information, 2007). The average family size in Yemen is 6.6 individuals in 1994 (Haglan, 1998a) and 6.9 in 2004 (Census, 2004). These circumstances increased the shortfall in housing, cost of land and rents, as well as expanded squatter settlements.

In addition to the population growth rate, migration from the countryside to the cities and wartime conditions increased the demand for housing. An influx of people from the countryside to the cities has occurred over the last decades. These people left their villages and migrated to urban areas where they hoped to obtain jobs and better services. Numerous businesses are located in the cities where jobs are available. Other political factors, such as the status of cities as the centres for management, organisations and media outlets, have played a significant role in the movement of these people. Social and cultural factors, such as the provision of health, educational services and a sense of cultural cohesion, are likewise better facilitated in the cities. These factors contributed to the widening gap between supply and demand and the worsening housing situation (Al-Ansi, 2006). The return of almost one million Yemeni immigrants after the second Gulf war has exacerbated the problem and expanded the slums and squatter settlements in urban areas (Al-Abed, 2003). In 1990, the unification between north and south Yemen, social evolution and tendencies of young people to prefer independent housing to form separate families have increased the demand for affordable housing and the cost of housing. These people are forced to live in conditions that constitute an affront to human dignity

(Almagraby, 2007). The primary challenges confronting low-income groups include lack of access to decent and affordable housing. These challenges are escalating principally because the rate of housing supply has not kept pace with the population growth (Aldhabebi, 2007).

Over the past three decades, the government of Yemen has delivered the housing projects for low-income groups as a means of ensuring sufficient housing supply and optimum living conditions, thereby contributing to improvement of the quality of life of the residents; however, these projects could not meet the continual housing demands (Djebarni and Al-Abed, 1998; Alaghbari et al., 2009). In contrast, after the Yemeni unification on 22 May 1990, the national housing strategy has changed to facilitate the different political systems of North Yemen (capitalistic) and South Yemen (socialist). Hence, several housing projects carried out by the private sector were not intended for the low-income groups. These projects were not designed and built to solve the housing shortage of the low-income groups, prompting many low-income people to live in rented and unsuitable units (Alaghbari, 2010). Yemen National Census (2004) reported the availability of roughly 2,192,458 housing units, whereas the housing shortfall was approximately 1,299,988. The lack of sufficient housing units that fulfil the needs, especially in major cities, is apparent and demonstrates the disproportionate distribution of households. Accessibility to affordable housing for low-income groups is a highly contentious obstacle facing the government of Yemen, especially in major cities (Al-Abed, 2003). Immediate needs should meet the demand for low-cost housing. Several previous studies have argued that the housing shortfall in Yemen will be long term (Al-Ansi, 2006). The main challenges facing the Yemeni government include inability to achieve sustainable

development and overcoming the increased pressure in the demand for affordable housing. These challenges are attributed to limited financial resources and the multiplicity of the fields and projects of the public sector requiring implementation. Financing a housing project in Yemen is not adequate or developed effectively compared to other countries. Some people attempt to build their houses themselves by saving money or obtaining loans from friends. A number of banks likewise provide loans, but these loans incur high interest rate and mortgage costs (Sultan and Kajewski, 2003).

A study conducted by Baharoglu et al. (2005b) in five Middle East countries, namely, Algeria, Iran, Lebanon, Morocco and Yemen, indicated that the deficit in access to decent housing is the principal problem. This problem has originated from the overall insufficiency of housing supply. Affordability is likewise a major problem. Housing and land supply policies, as well as the extremely high prices of housing, contribute to the problem. Moreover, inadequate housing supplies and the continually increasing demand contribute to the high housing prices and low level of affordability.

1.3 Statement of the Problem

The problem identified in this study is the inability of the Yemeni government to provide affordable housing for people, which translates to the lack of financing sources. The delivery of affordable housing is a serious concern in Yemen, which is mainly attributed to the inability of government to fund projects for low-income people; this situation is caused by the funding trends for housing construction, which dwindle every financial year (World Bank, 2000). This problem may be exacerbated

by the minimum efforts to investigate other avenues to obtain alternative funding for the increasing production of housing projects and infrastructure. Hence, government allocations are insufficient.

Population growth significantly increases the demand for housing, cost of land and rents, as well as expands squatter settlements (Al-Abed, 2003). The Yemeni government is unable to address the housing crisis and increase the supply of housing because of the lack of financial resources (Djebarni and Al-Abed, 1998). Hence, urgent housing policies and strategies are required in Yemen to reduce housing shortage, particularly for low-income groups, by seeking sources of funding support devoted to affordable housing projects and encouraging the private sectors through investment, additional incentives and housing finance development (Alaghbari et al., 2011). The widening gap between housing demand and supply in Yemen has provided an opportunity for its government to explore innovative means of increasing the supply of affordable housing (Al-Abed, 2003). The PPPs are approach proposed by researchers and the government. The PPPs model should be investigated and adopted, if applicable; it can be explored to aid the current situation and entice the private sector to invest its funds into housing and infrastructure projects with guaranteed future returns. The PPPs is an internationally accepted public sector procurement means in which the governments engage adherence from the private sector and transfers a certain level of responsibility to the private sector in providing public facilities or services. Accordingly, adopting PPPs is claimed to significantly decrease the upfront costs of the government in providing and maintaining public facilities, improve public facilities and services and promote innovation by the private sector (Pollock et al., 2004; Heald and Geaghan, 1997;

Glaister, 1999). One of the most significant changes in government policy is an attempt to place more responsibility on the private sector through PPPs. This move is consistent with the fact that governments in developing countries have failed to address the shortcomings and challenges faced by these governments in the provision of services and infrastructure (Ibem et al., 2012).

Globally, PPPs have become a popular supplement to traditional public sector funding models for delivering public infrastructure and related services using private funding (Broadbent and Laughlin, 2003; Susilawati and Armitage, 2004). The Ministry of Public Works and Highways (2010) proposed a new policy to develop affordable housing throughout the country. This proposal reported that the housing problem has intensified in the last two decades because of numerous interrelated factors, including the widening gap between demand and supply. In this proposal, the government was willing to achieve housing policy goals by covering the housing demand via innovative mechanisms for increasing the provision of affordable housing for all. The new policy of PPPs remains under study. Moreover, the International Financial Corporation (2008) advised the Yemeni government to establish PPPs as a new policy to provide public services and infrastructure projects. The PPPs as a means of improving efficiency and infrastructures are necessary to promote the economic living conditions of the country. Thus, the participation of the private sector in the provision of basic services has been considered as a highly contentious issue in several countries. The plan was to introduce non-government organisations (NGOs) to get involved in the provision of basic services by offering them investment opportunities. Moreover, private financing ensures the development of projects for which no government budgets are available upfront.

PPPs are perceived as a mechanism for efficiently providing public services by combining the outsourcing efforts of local public agencies and private organisations or NGOs to implement PPPs (Taseska, 2008). PPPs are expected to reduce the pressure on government financing and obtain good value for money in providing services to the public, delivering infrastructure and sharing risks (Hodge and Greve, 2007a). PPPs have been implemented worldwide; for instance, Nigeria has adopted PPPs as a suitable means of achieving success factors and addressing the challenges of the immense shortfall in affordable housing (Ibem, 2010). Government agencies in Malaysia have developed affordable housing using the PPPs approach (Abdul-Aziz and Jahn Kassim, 2010). The Yemeni government has realized that in several cases, it cannot provide housing projects as efficiently and effectively as the private sector, which is considered the catalyst of providing affordable housing, infrastructure, public services and economic growth. Alternative means of supporting affordable housing projects and infrastructures should be identified due to the inability of the government to finance housing projects. However, adoption of the PPPs entails the readiness and capacity of all of the involved players to ensure the success of PPPs projects. However, such readiness for adoption of the PPPs remains uncertain.

Hodge and Greve (2007b) indicated that the PPPs results remain contradictory in terms of their effectiveness in several governments and public sectors, which require the evaluation process in the future. Thus, guidance is necessary to focus on the readiness factors prior to the adoption of the PPPs model and the justification thereof. Numerous scholars have suggested that readiness theory can be used to construct the readiness model. Readiness pertains to the ability or capability of an

organisation to adopt or implement new ideas, processes or products (Bums and Stalker, 1961; Vakola, 2013). According to Armenakis et al. (1993), the attitudes of employees towards a proposed change is an indicator of the readiness of their organisation to implement the change. Most studies on readiness focus on internal organisational characteristics, such as employee attitudes towards change. People who comprise organisations seem to be the real means of ensuring the success of change (Smith, 2005). Readiness is a prerequisite for organisations to achieve the successful implementation and adoption of new ideas. To ensure the further success of the implementation of new ideas, organisations should assess their adoption readiness (Pond et al., 1984).

Nevertheless, the readiness of public and private sectors to adopt PPPs in Yemen remains unknown. At the time of writing, the researcher has not found any literature that examined the factors affecting the readiness to adopt PPPs. Despite the abundant number of studies that examined the implementation of innovation, no research has investigated PPPs implementation among organisations using readiness theory. The current study is considered the first work of pioneer academic studies on the readiness to adopt and practice PPPs in Yemen. In contrast, a considerable number of studies have focused on the factors that influence the readiness of organisations to adopt new ideas. The organisations understand the need to adopt new ideas. Thus, such adoption in organisations has become a provenance for competition (Ozturk, 2010). The basic premise held by researchers in the readiness for adopting new ideas is that some factors may affect the adoption of any new idea within the organisations. For instance, organisational structure and culture serve as important factors in the success of organisations (Christine, 2011). Initial research indicates that several

attributes impact the organisations through the adoption of new ideas (George and Jones, 2003). According to Hill and Hupe (2002), successful organisations have cognitively assessed certain factors and their presence prior to the implementation of a practice or a new idea. However, conflicting views exist regarding the factors that influence organisational readiness to adopt new ideas (Hult et al., 2004). Hence, the factors that influence organisational readiness should be further investigated.

The internal factors that help organisations to adopt new ideas include structure, culture and resources (Kimberly and Evanisko, 1981; Moss Kanter, 1988; Thong, 1999; Subramanian and Nilakanta, 1996; Russell and Hoag, 2004). A competitive business environment likewise plays an influencing role in the innovative capability of organisations (King and Anderson, 1995). According to Yusof and Mohd Shafiei (2011), some factors that affect the readiness of the housing developers to adopt innovative systems are contingent upon external support and market readiness as the two most important factors influencing the readiness of Malaysian developers to implement a Build Then Sell (BTS) system. In their study, the authors argued that the developers were partially ready to adopt the new housing delivery system. Moreover, the readiness of housing developers to implement the new BTS system is significantly influenced by external factors (i.e., government and stakeholder support) and market factors.

Interestingly, based on the previous studies of Li et al. (2005) and Cheung et al. (2009), the attractive factors perceived by the respondents in the United Kingdom are different from those in Hong Kong and Australia. Thus, the factors that affect PPPs adoption in each country are different from those in other countries. Different

countries need to identify their distinct strategies to encourage effective public and private sectors, thus ensuring their readiness to adopt PPPs. Hence, the present study fills the gap by investigating the factors influencing the readiness for implementing PPPs in Yemen. From the preceding discussion, the following three questions are raised in this study: What is the extent of readiness, of both the public and private sectors, to adopt PPPs in Yemen? What is the relationship between internal and external factors for organisations and readiness to adopt PPPs as a new idea in Yemen? What factors significantly predict the adoption of PPPs in Yemen?

1.4 Research Questions

This study investigated and examined the possibility of adopting the PPPs approach as a new policy to overcome the lack of affordable housing in Yemen through factors that could contribute to PPPs adoption and implementation in developing affordable housing. The major research questions are as follows:

1. What is the extent of readiness of both the public and private sectors to adopt PPPs in Yemen?
2. Do relationships exist between internal and external factors for organisations and readiness to adopt PPPs as a new concept in Yemen?
3. Which factors predict the readiness towards PPPs in Yemen?

1.5 Research Objectives

The main objectives of this study include evaluating the adoption of the PPPs and exploring the factors that could help in adopting PPPs in developing affordable

housing in Yemen. In other words, the three objectives can be achieved through the following:

1. To assess the extent of readiness of both the public and private sectors to adopt PPPs in Yemen
2. To examine the relationships between internal and external factors for organisations and readiness to adopt PPPs as a new concept in Yemen
3. To identify the factors that predict the readiness towards PPPs in Yemen

1.6 Scope of the Study

This study focused on investigating the extent of the readiness of both the public and private sectors to adopt PPPs in Yemen. It likewise examined the relationships between external and internal factors and the readiness to adopt PPPs as a new concept and investigated the factors that predict the readiness towards PPPs. The study was conducted in Yemen cities, namely, Sana'a Aden, Thamar, Taiz, Al Hudaydah, Ibb, Hadhramaut, Al Bayda and Lahij. These cities were selected because they are considered the main cities in Yemen; organisations involved in PPPs projects exist in these cities. The organisations involved in the study are registered with the MPWH in Yemen and are public sector organisations as well. They were selected using stratified simple random sampling. The targeted respondents included those who are at the decision-making level. They are either the owner or the manager of the organisation. These individuals have the necessary knowledge about the organisation.

1.7 Significance of the Study

Findings could be useful in identifying government strategies for helping develop affordable housing and infrastructure projects through PPPs implementation. The results will help the policy makers to identify suitable policies and rules to facilitate the development of affordable housing and the necessary infrastructure for the poor and low-income groups through the private sector. Identifying the factors for increasing the PPPs readiness of the private sector will aid the private developers in several aspects; for instance, their active involvement will help the government to increase the supply of affordable housing in Yemen. This study will likewise help reduce the financial burden of the Yemeni government. Identifying the factors for boosting the readiness to adopt PPPs can help both the public and financial institutions to manage their limited resources to increase the supply of affordable housing. The results of this study can aid the poor and low-income groups by ensuring the affordability and accessibility of housing through PPPs implementation.

1.8 Organisation of the Thesis

This thesis is divided into the following five chapters:

Chapter 1:

This chapter presents the introduction of the study. It likewise highlights the context, background of problem statement, research objectives, main research questions, scope and significance of this research and the organisation of the thesis.

Chapter 2:

This chapter presents the review of literature to highlight the concept and definition of PPPs. It likewise presents the benefits and obstacles of PPPs. Moreover, it discusses the readiness theory to change, which is the basis of the investigation on the readiness of the public and private sectors to implement PPPs. This chapter subsequently presents the factors that influence the organisations to adopt PPPs as a new concept, as well as the conceptual frameworks for the research. Finally, it discusses the hypotheses developed in this study.

Chapter 3:

This chapter focuses on the research methodology of the study. It explains the research design and data collection technique. It likewise briefly explains the types of data analysis used in the study.

Chapter 4:

This chapter presents the data collected, research findings, reliability and validity of the constructs and analysis of data. It likewise discusses the main findings of the study. Finally, it summarizes the research findings.

Chapter 5:

The final chapter of this research presents the summary and general conclusions. It likewise highlights the recommendations and directions for future research on PPPs adoption to facilitate the development of affordable housing in Yemen.

CHAPTER TWO :

LITERATURE REVIEW

2.1 Introduction

This chapter presents the review of literature to highlight the definitions and relationships among the variables used in the study. It aims to develop a conceptual framework for determining the direction of the study. The chapter starts by defining of affordable housing, housing delivery system in Yemen and defining public–private partnership PPPs, which is the focus of the study, and then discusses the models of public private partnerships, benefits and obstacles of PPPs as highlighted by several researchers. Next, the chapter reviews the definition and concept of readiness for change, which is the main theory adopted in the study to explain the extent of readiness of both the public and private sectors in Yemen to adopt PPPs. In this sense, PPPs are regarded as a new mechanism proposed by the Yemeni government to facilitate the development of affordable housing. The chapter subsequently discusses the readiness index, as well as the internal and external factors that influence the organisations to implement PPPs as a new mechanism. Finally, this chapter presents the theoretical framework and hypotheses developed to achieve the study objectives. A summary concludes the chapter.

2.2 Definition of Affordable Housing

EPRU (2008) regarded housing affordability as an important determinant of house prices in the short run because builders and would be owner occupiers invest in houses if house prices exceed acquisition costs. According to Hancock (1993)

households should be able to occupy housing that meets well-established (social sector) norms of adequacy (given household type and size) at a net rent which leaves them enough income to live on without falling below some poverty standard. Whitehead (2007) argued that definition of affordable housing is concerned with securing some given standard of housing (or different standards) at a price or rent which does not impose, in the eye of some third party (usually government) an unreasonable burden on household incomes. According to Field (1997) affordable housing could be thought of as physically adequate housing that is made available to those who, without some special intervention by the government or special arrangement by the providers of housing, could not afford the rent or mortgage payments for such housing. Definitions of affordability concentrate on the relationship between housing expenditure and household income and define a standard in terms of that income above which housing is regarded as unaffordable (Freeman et al., 1997). Hence, housing affordability is the relationship between the costs incurred for housing and the household income, which should not exceed 30% of household income. Affordable housing is then defined as housing, which has a market price or rent that does not exceed 30 % of a household's gross income. This measure applies to households of low-income defined by the United Nations in 1996.

2.3 Housing Delivery System in Yemen

2.3.1 The Traditional Housing Delivery System

The traditional housing delivery system in Yemen uses the old system of the building before the new system of housing delivery. It uses the self management and self built by the owner basically to create shelter. In this system, no consultants such as architect, engineer or quantity surveyor is needed. This system is usually

found in the early days of housing history. The owner design, plan, and construct the house themselves by referring to what surround them. Materials and technologies of construction always reflected by the culture of the people. In other word, conventional housing system is the traditional housing delivery system. This model of the housing delivery system is still very common in Yemen (Sultan and Kajewski, 2003).

2.3.2 The Current Housing Delivery System

In Yemen the responsibility of providing decent housing for the urban low-income households, especially the urban poor, is undertaken by the Ministry of Urban Planning and Housing (National Center for Information, 2007). In the late 1970s, the MUPH was charged with supervising a housing scheme Master Plan for Sana'a. The plan was proposed by the American Consultants and commissioned by the Yemeni government. The housing objectives of Sana'a's Master Plan for the period 1978 to 2000 by American Consultants, were designed not only to ensure sufficient housing supply, but also to ensure that all future housing developments meet acceptable standards in terms of construction quality and provision of amenities and facilities, both within the dwellings and the surroundings. This plan was implemented directly through three public housing schemes (Sites-and-services, and Upgrading) and indirectly through granting soft loans (Bank Loan scheme). The Site-and-Services scheme were to provide housing for the low income groups, American consultants proposed a site-and-services programme for which the site chosen was an area called Sawad Sawan to the north east of Sana'a (Berger and Kampsax, 1978b). Such a programme consists of the government providing usually free of charge or at minimal cost, the land and urban infrastructure such as utilities and community facilities. Out of an available 50 hectares, 25 hectares of virgin land was selected to

accommodate about 2,056 low income households out of about 11,100 people, on the basis of proximity of suitable employment, accessibility to existing asphalted roads and efficient use of existing or planned improvements which would add to the effectiveness of the site (Mustafa, 1991).

The upgrading scheme, at a location in Musayk, about 1.5 km to the south of the site-and-services project and about 1 km to the north-east of the old city, a scheme was chosen as an upgrading area. The scheme covered 68 hectares and had a target population of 22,000 people living in 2,600 buildings. The proposal for this area was designed to improve living conditions for residents by providing the necessary infrastructure without initially disrupting tenure or rental conditions or displacing residents, and to ensure that the beneficiaries could afford to pay for the project. The Bank Loan scheme, the Housing Credit Bank (HCB) was established under the supervision of the Ministry of Urban Planning and Housing in 1977. The major objective of the HCB is to provide housing finance as a contribution to the housing delivery system in Yemen. One of the imminent projects of HCB was the Housing Credit City Bank to the south of the old city. The project consisted of 640 houses built by a Chinese corporation using modern methods of construction (precast concrete). The typical design of the project consists of three bedrooms, a living room (dewan), a dining room, a kitchen, a bathroom, toilets and a store. The project included necessary facilities outside the houses such as paved roads, a school, and a mosque. The target group was low income government employees (Djebarni and Al-Abed, 1998). The public sector launched a number of housing projects for low-income government civil servants with financial and technical assistance from regional and international organizations. In some projects, the government provided

the land, infrastructure and plans and left the responsibility of building to the beneficiaries. In certain cases, the Housing Credit Bank either directly contracted out the construction process, or provided soft loans to those citizens. Examples of such projects are the Sawad Sawan in Sana'a and Ghalel in Hodeidah. In what used to be called the PDRY (South Yemen) before the 1990 reunification, the government, that took total control over real estate ownership following the 1967 independence. All kinds of property and lands were nationalized. The government shouldered responsibility of providing housing for each and every citizen. It ostensibly pledged to construct housing units and provide them to the people as tenants and not owners. Unfortunately, due to high costs, scarce sources and lack proper management, the government was not able to meet the increasing demand. As a result, not much construction took place (Haglan, 1998b).

The private sector provides the housing for low and middle income groups the houses are built through the institution, then offer to the open market either for renting or sale. Currently, there are many projects financed by the private sector, such as Anma city, the Green city and so on, all of these projects comprised from apartments villas and community facilities and still some of them under construction. For example, one developer is now establishing a housing bank (using capital from private sources) (Almagraby, 2007). The capital is \$100 million. They are providing credit to purchases houses with a 7-year repayment period at 50 % per year interest which are relatively good terms. The land was acquired by the developer on a 99-year lease at a cost of 10 US cents per sq meter in villa development half the area is disposable to customers due to planning regulations concerning development about 7 % of the area saleable. Having acquired the land cost of payment needed to obtain

all permissions is about 9 US cents per sq meter. The cost of roads, sewerage, electricity and telecoms to each dwelling is updated as \$3,700 per villa unit and \$1,790 per apartment (at 5 storey's) this assumes that primary facilities are already available in the vicinity, although with developers have found it necessary to build small power stations themselves and the necessary charge to customers at 10 US cents per kw hour. This is high. After services, the developer constructs the dwellings at a cost of \$120 per square meter for a low cost house. The cost of a luxury standard is about \$200 per meter. Therefore, the housing that were built by the private sector were expensive and very few of these units can be afforded for the urban poor (Djebarni and Al-Abed, 1998).

2.4 Definition of PPPs

Link (2006) stated that the term “public” as used in public–private partnerships connotes the presence or involvement of government resources either at the federal, state or local level, whereas “private” involves the use of resources belonging to the private entity, typically a corporate organisation. He further emphasized that resources, such as funding, infrastructures and enabling environment, should be adequate in innovative ways. Similarly, “partnership” depicts an innovation-related relationship that can either be formal or informal. Brinkerhoff (2002) defined partnership as a dynamic relationship between different players, is based on mutual consented objectives and pursued through the understanding of the participant regarding the most logical division of work on the respective comparative benefits of each partner. According to Kwak et al. (2009), the willingness of public and private organizations to work together includes the sharing of resources, risks, obligations and rewards with others to attain joint objectives. Pessoa (2006) defined PPPs as a continuous common effort between the governments and private entities to pursue

mutually agreed objectives without compromising their personal goals. He explained that each partner involved in the design, financing, managerial and technical resources is important in the implementation and sometimes operation of the project in accordance with the relative stake of each partner. This partnership equally entails the sharing or apportioning of both risks and benefits arising from the project as contained in the terms of arrangement or agreement.

PPPs require public and private organisations to work collaboratively to improve products or services, and share risks, expenses and resources that are connected with infrastructure and services (Hodge and Greve, 2005). Sharma (2007) pointed out that PPPs are an agreement between the agencies of government and NGOs for providing infrastructures and public services by sharing the risks and remunerations of the projects. Amit et al. (2007) considered PPPs as a mechanism under which services are delivered by private organisations, both non-profit and for-profit sectors, whereas the responsibility for the provision of resources is undertaken by the authority. This partnership indicates the sharing of resources and desire to work together towards a common objective. Although the distinct personality of each party is respected, the partnership would result in a clear understanding of the functions and responsibilities of each party. Koppenjan and Enserink (2009) stated that PPPs are an alliance between government agencies and private sector agencies to share the benefits and common interests that operate within projects. One of the benefits of the public sector is the opportunity to become more involved in technical enterprise. Koppenjan and Enserink (2009) highlighted that the public sector will have the ability to identify the best technical operations and improve efficiencies in government programmes and services. These interactions will increase the possibilities for the owners of the

public interest by allowing them to obtain additional sources of funding when exploring new ventures. Hence, PPPs are important because they can improve the responsibility of the public sector by accessing financial resources from the private sector, thus effectively solving community issues (Koppenjan and Enserink, 2009). The term “PPPs” has been used extensively, as described by the World Bank.

The main element of the “partnership” approach is the implementation of infrastructure, which is contrary to a “supplier” relationship. Each stakeholder is responsible for a component of the total project. Stakeholders work together and assume joint responsibility for each component; the responsibility includes sharing of risks, tasks, obligations and rewards (Sanghi et al., 2007). This responsibility is undertaken in conditions when the value for money advantage is available to taxpayers (Sanghi et al., 2007). PPPs represent a broad range of collaboration among the public and private sectors in the decision-making and resource obligations, as well as in the division of tasks, profit and risks based on relative benefit, with the general goal of addressing community challenges (Aziz et al., 2007). PPPs have been practiced in several countries over the last decades, including Egypt, Malaysia, India, Pakistan, South Africa, Bulgaria, Mexico, Russia, Thailand and the United Kingdom. PPPs are likewise a mechanism for long-term cooperation agreements between the government and the private sectors to deliver infrastructure service. This practice has become a popular assessment approach of the government towards the private sectors based on expertise and skills. Moreover, this approach combines the advantages of competitive and negative tendering between private sectors of the same profession.

2.5 Models of Public Private Partnerships

The realization of most public projects requires two main sequential stages: the planning stage where the project is designed, and the implementation stage where the project is executed. Under a public-private partnership (hereafter abbreviated as PPP), the supplier takes responsibility for both the building of the infrastructure and its managing and maintenance (Kwak et al., 2009). The DBFO model ('Design', 'Build' 'Finance' and operate'), the BOT model ('Build', 'Operate' and 'Transfer') or the BOO ('Build', 'Own' and 'Operate') and BOOT ('Build', 'Operate', 'Own' and 'Transfer') are all common contractual modes that feature bundling of building and operation in a single contract with a single firm (or consortium of firms). PPPs are used across Europe, Canada, the U.S. and a number of developing countries for the provision of public infrastructures and services in sectors such as transport, energy, water, IT, prisons, waste management, schools, hospitals and others (Iossa and Martimort, 2012). Design-Build-Finance and Operate (DBFO) has defined that private sector is responsible for the finance, design, construction, operation, and maintenance of a project. In nearly all cases, the public sector retains full ownership over the project.

Build-Own - Operate (BOO) is similar to a BOOT project, but the private sector retains the ownerships of the asset in perpetuity. The government only agrees to purchase the services produced for a fixed length of time (Kwak et al., 2009). Build-Operate-Transfer (BOT) has established itself as a valid delivery/financing system, whereby a private sponsor an individual private entity or a consortium of investors finances the design, construction, maintenance, and operation of a public project for a specified concession period, at the end of which it transfers ownership to the government agency, hopefully after recouping its costs and achieving profits

(Schaufelberger and Wipadapisut, 2003). The main idea behind using BOT is to alleviate the spending on governments' budgets by seeking capital from external financiers especially on large-scale projects. The BOT contractual arrangement provides a mechanism for using private finance; and thus it allows governments to construct more infrastructure services without the use of additional public funds (Shen and Wu, 2005). Jones (2003) states that it is the contractual structure of a BOOT that forms the backbone of Australia's PPP experience. The BOOT approach entails the project needs of the client (e.g. a building, road or similar facility) being met through an entity contracted to finance, design, build, operate and own the facility for some period of time and then transfer it back to the client. During the period of ownership, the entity collects the revenue in order to repay the finance and investment costs, maintain and operate the facility and make a margin of profit (Chu, 1999).

According to McDermott (1999), a significant development in construction procurement has been the rapid increase in the use of Build-Own-Operate-Transfer (BOOT) arrangements. There is a growing trend for governments and other clients in the construction industry to place major projects into the private sector (Angeles & Walker, 2000). The private sector is playing an increasingly important role in this trend that has partly risen out of a necessity for the development of infrastructure to be undertaken at a rate that maintains and allows growth. This in turn has become a major challenge for many countries, and particularly so where it is evident that these provisions cannot be met by the government alone, as they have typically been in the past. The emergence of BOOT schemes as a response to this challenge, provides a means for developing the infrastructure of a country without directly impacting on