

An-Najah National University

Faculty of Graduated studies

**Major Obstacles Facing the Implementation
of Build-Operate-Transfer (BOT) Model in
Palestinian Infrastructure-Water and
Electricity Sector**

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III

Dedication

First, I dedicate this thesis to my husband''

Saleem Alagra''

Who helped me achieve my thesis

To my mother

Who granted me love and encouraged me every step of
the way

To my supervisor Dr. Abdul Fattah Shamleh

Whose efforts aided me to complete the thesis

To Dr. Salah Sabri

Who inspired me to make my dreams come true

To my lovely daughter Batool

To my sons Abd-alkareem, Anwar, the warmth of my
Life

To my sisters (Tahani, Amani) the soul

To my Brothers (shareef, hani, isam) love you

To my close family

"Brigadierlyad alagra', Dr. Nour Alagra', Ziad Alagra',
Ashraf Alagra' & Nisreen Alagra'"

To my best friend

Amenah Gashash, Mays Aldeleg, Tahani

Alagra' Amenah Alagra', Reem Alagra', Noura Alagra'

and all my friends

Thanks to all, love you

Acknowledgments

*I am grateful for the Almighty God who gave me the
power to complete this work*

Many thanks to me

husband "Saleem Alagra"

*who supported me all the time, and gave me the power,
self-confidence, positive feeling to be reach where I am
today*

All thanks to

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V
الإقرار

أنا الموقعة أدناه مقدمة الرسالة التي تحمل العنوان:

Major Obstacles Facing the Implementation of Build-Operate-Transfer (BOT) Model in Palestinian Infrastructure-Water and Electricity Sector

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Declaration

The work provided in this thesis, unless otherwise referenced, is the researcher's own work, and has not been submitted elsewhere for any other degree of qualification.

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Date:

التاريخ: 25/6 /2018

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List of Abbreviations and Definition of Term

Abbreviations	Description
PPP	Public private partnership
BOT	Build, operate, transfer
BOO	Build, own, operate
BOOT	Build, Own, Operate, Transfer
DBO	Design, Build, Operate
BOLT	Built-Own-Lease-Transfer
PFI	Private finance initiative

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Abstract

The study aimed to identify the obstacles facing the implementation of BOT model in the Palestinian infrastructure visa vie water and energy sectors.

The study attempted to answer its main question: What are the legal, administrative, financial, political, social and technical obstacles that impede the implementation of the BOT model in the Palestinian infrastructure, in the water and energy sector? Each obstacle was addressed in a set of sub-questions in order to answer the main question of the study.

Relevant literature review has been made, the researcher interviewed many government officials and businessmen. A questionnaire has been designed as a data collection tool. The questionnaire included 55 phrases distributed on six main categories of obstacles: the legal category included 11 phrases, the administrative category included 15 phrases, the financial category included 11 phrases, the social category included 5 phrases, the political category included 7 phrases. The fifth Likert scale was used: (very high, high, moderate, weak, very weak).

The study community comprised (668) individuals, (208) government officials and (460) businessmen classified (A)where the targeted sample

included (430), 230 businessmen and 200 government officials in the Water and Energy Authority, where (376) questionnaire were valid for analysis. The study sample was selected to cover all government officials in the Water and Energy Authority and 50% of the businessmen. Data analysis was implemented using SPSS after coding the questionnaire. The results of the descriptive analysis were expressed using weighted percentages and arithmetic averages, T test, one way Anova, and Cronbach's - Alph (Internal consistency). After statistical figures appearing in the charts, the data was analyzed theoretically by making use of the literature review.

The results indicated that the impact level of all six categories of obstacles were high with a mean of 3.815 and an arithmetic average of 3.70 to 3.97. The response level was high for all categories. Political obstacles are the most influential factors with a mean 3.97. The political obstacles were the highest rated obstacles, which limit the application of BOT (control of the Israeli side over large areas of area C with a mean of 4.29). In other words, the military orders, controls and instructions of the military government regarding the use of the Palestinian infrastructure with a mean of 4.195. The intervention of political trends in the implementation of BOT projects with a mean 4.11). 55 phrases were at a high level in terms of their impact, while only one statement rated the level of effect at an average (the possibility of subsequent governments denying the obligations of the previous government with a mean 3.32).

The Study recommended the following:

Recommendation for the Public Sector (The Government)

The researcher recommended the establishment of a special unit in the prime ministries office to deal with BOT strategy adoption. This unit should be responsible for coordinating BOT strategy adoption in project with the various ministers. Add to this, setting out a legal framework to adopt BOT strategy that will lead to build partnership and define the rules and procedures that govern this strategy in order to attract investors to participate in this strategy. The government must develop a BOT guide that deals with all the details and specifications of BOT strategies and learn from the experience of other countries in preparing such a guide. The study also recommended promoting the culture of partnership through conducting workshops, trainings and conferences advocacy campaigns. This can be achieved through dialogue with the various sectors that are qualified to join such partnerships as the BOT and showing the benefits that can be achieved. Chambers of commerce plays an important role in highlighting the importance of BOT Strategy through conducting workshops that aim at reflecting to the private sector the concept of BOT strategy and the special contracts that govern it. The government has to encourage the financial institutions to adopt a vision related to funding BOT projects where the government ensures the rights of investors. The researcher stressed the importance to engage the private sector representatives in the final status negotiations to express their interests and needs that will affect the peace process. Finally enhance and improve communication between the two sectors (private and public) when implementing BOT projects through

activating the role of the coordinating council and introducing new partners from the water and electricity sector.

Recommendation for the Private Sector

The private sector, represented by the Coordination Council, opens channels of communication with the relevant ministries, through which it presents the capacities and potential of the private sector in addition to the financial and human resources necessary to enter into partnerships of this kind and based on the BOT model. In addition, it opens channels of communication with the Monetary Authority, local and national banks in order to reach joint financial approaches to fund BOT projects and these approaches ensures the rights of all relevant stakeholders. The researcher also calls upon the private sector to initiate partnerships to implement BOT projects and construct the suitable and sound infrastructure for these projects to coordinate with special unit in Pri ministries to submit a holistic applicable vision for these projects based on the Arabic experience in this domain thus urging the public sector to adopt this strategy. This holistic vision should clarify all the possibilities and potentials of the private sector and consequently qualify it to implement such projects.

Finally, the study recommended that future studies on BOT projects include the finance sector such as banks, financial institutions and the community (the end user) and aim to identify the obstacles facing the financial institutions in funding infrastructure projects within the BOT projects. The researcher built a model based on the results of the study aims to overcome the obstacles of implementing the BOT project in the

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Palestinian infrastructure which include: the sectors of water networks and power stations. Moreover, studying the inputs, outputs and the results of implementing this strategy with respect to the Palestinian situation

Chapter One

Introduction

Chapter One

Introduction

1.1 Overview

Water and electricity services play a critical role in the lives of citizens. Their infrastructures are major requirements for normal living, well-being, as they attract businessmen to invest in the industrial and commercial domains. As such, they are a necessity for economic and social development. Therefore, despite the scarcity of resources, the Palestinian authority has focused its attention on utilizing its natural resources since its coming in 1994. This was considered as one of the crucial tasks to improve the level of well-being and livelihood of a population getting rid of the occupation. However, it was not easy for the Palestinian Authority to completely take advantage of the resources considering the unfair practices of the occupation. Add to this, building infrastructure for these vital services was not an easy job considering the lack of financial resources to implement such projects. It has become clear that building a well-established infrastructure requires the engagement of the private sector, where a lot of preparations and contractual modalities are needed to ensure a rational and productive cooperation between the public and the private sector. Consequently, many forms of public-private sectors' partnership were initiated to implement such projects. BOT strategy was the most prominent one among other strategies with the least level of shortcomings. The trend towards BOT contracts in implementing infrastructure projects

have become a convincing strategy for financing such projects. In the Arab world, these contracts have been prevalent, especially in Egypt, the United Arab Emirates, Sudan, Lebanon, Syria, Morocco, and Kuwait. Adopting this strategy requires particular attention to success factors. In the initial phases, there is a need to investigate the various areas of this type of contracts. BOT strategy attained significant importance as an exceptional approach in constructing and managing public facilities. As the private sector implements the facility, it replaces the work of the government, operates and manages the public services as agreed in the contract (concession period) and benefits from the revenues generated from these services, this enables the project proponent to recover its investment, operating and maintenance expenses in the project. After this period, the state takes over the ownership of the facility. This experience was successful in many countries which implemented many projects such as railway stations, electricity and drinking water (*Odeh, 2008: p.12*)

1.2 Problem Statement

Despite the great achievements during the past decades in the field of infrastructure, still many problems aroused in this respect. The existing infrastructure in Palestine is in need of enormous financial resources for the construction and maintenance process, especially with the technological development and high rates of inflation. At the same time, the budgeting at the local level is facing deficit and pressure with the possibility of increasing taxes. Not to forget the political and economic fluctuations that

affect the Palestinian arena and the adoption of government funding of donor states and their responsiveness to the demands of the Palestinian economy. In addition, the limited resources and population growth require infrastructure services particularly water network project and power generation stations. All of these demands have created a real dilemma in the ability of the Palestinian National Authority efforts in the establishment of water networks and new electricity generating stations to bridge the gap between the available and what is required in light of the increasing number of population and urban stretch of high way (*Alqumsan,2005: p.18*). Therefore, the search for contractual modalities of global models of the partnership between the public and the private sectors is more pressing. From these formulas, the most famous is BOT projects. Despite the success of these formulas in many states, their application needs the provision of several requirements which call attention to it, especially in light of the studies conducted in this regards. Consequently, it was necessary to provide a scientific base of information to enable the Palestinian National Authority so that it can adopt appropriate policies. The expression of the problem of the study and research question is: What are the major obstacles for the implementation of BOT model in the Palestinian infrastructure visa vie water and energy sector?

1.3 Research Importance

The importance of this study lies in the following:

a) The Scientific Usefulness/benefit

- It provides a substantive scientific, objective study and feedback to researchers regarding the possibility of applying BOT contracts by drafting recommendations derived from the scientific research, in order to assess the impact on the development of the public sector in Palestine.
- It gives the officials a clear picture regarding the difficulties facing the implementation of BOT strategy, and offers future feedback when they are applied.
- It shows the importance of partnership between the public and private sectors.

b) Practical usefulness to the related parties:

To the government: to identify the financial and administrative constraints in the application of BOT projects in the Palestinian infrastructures.

To the economy: in case of achieving the partnership between the public and private sectors, this may lead to sustainable development.

To the business sector: participation in building the state and generate profits.

1.4 Research Objectives

The present study aims to achieve the following objectives:

- To identify the basic obstacles that face the implementation of BOT project in the Palestinian public sector and choose the appropriate strategies to deal with.

- To define the rationales for applying BOT projects, and what the expected results are in the Palestinian situation.
- To formulate a suitable model for BOT contracts in Palestine.

1.5 Research Questions

This study attempts to answer its major question: What are the major obstacles for the implementation of BOT strategy in water and energy sectors in Palestine?

This question is discussed in the following minor questions:

- What is the level of influence of the legal obstacles for the implementation of BOT strategy in water and energy sectors in Palestine?
- What is the level of influence of the administrative obstacles for the implementation of BOT strategy in water and energy sectors in Palestine?
- What is the level of influence of the financial obstacles for the implementation of BOT strategy in water and energy sectors in Palestine?
- What is the level of influence of the political obstacles for the implementation of BOT strategy in water and energy sectors in Palestine?
- What is the level of influence of the social obstacles for the implementation of BOT strategy in water and energy sectors in Palestine?

- What is the level of influence of the technical obstacles for the implementation of BOT strategy in water and energy sectors in Palestine?
- Are there any statistically significant differences at the significance level ($\alpha = 0.05$) in the obstacles to the implementation of BOT strategy in Water and Energy sectors in Palestine attributed to the following variables: gender, age group, institutional reference, functional status, years Experience, qualification, specialization, and persuasion?

1.6 Research Hypothesis

This research aims at testing the following set of hypotheses:

Hypothesis 1: Major obstacle facing the implementation of “BOT” model VS Gender variant

H1: There are no significant statistical differences attributed to the gender variable at the level ($\alpha \geq 0.05$) in the hindrances of applying the BOT model of the Palestinian infrastructure applied in water and energy sector.

Hypothesis 2: Major obstacle facing the implementation of “BOT” model VS Age group variant.

H1: There are no significant statistical differences attributed to the age group variable at the level ($\alpha \geq 0.05$) in the hindrances of applying the BOT model on the Palestinian infrastructure applied in water and energy sector.

Hypothesis 3: Major obstacle facing the implementation of “BOT” model VS Institutional reference variant

H1: There are no significant statistical differences attributed to the institutional reference variable at the level ($\alpha \geq 0.05$) in the hindrances of applying BOT model on the Palestinian infrastructure applied in water and energy sector.

Hypothesis 4: Major obstacle facing the implementation of “BOT” model VS The status variant

H1: There are no significant statistical differences attributed to the status variable at the level ($\alpha \geq 0.05$) in the hindrances of applying BOT model on the Palestinian infrastructure applied in water and energy sector.

Hypothesis 5: Major obstacle facing the implementation of “BOT” model VS Number of years of experience variant

H1: There are no significant statistical differences attributed to the years experience variable at the level ($\alpha \geq 0.05$) in the hindrances of applying BOT model on the Palestinian infrastructure applied in water and energy sector.

Hypothesis 6: Major obstacle facing the implementation of “BOT” model VS Educational qualification variant

H1: There are no significant statistical differences attributed to the educational qualification variable at the level ($\alpha \geq 0.05$) in the hindrances of applying BOT model on the Palestinian infrastructure applied on water and energy sector.

Hypothesis 7: Major obstacle facing the implementation of “BOT” model VS Specialization variant

H1: There are no significant statistical differences attributed to the specialization variable at the level ($\alpha \geq 0.05$) in the hindrances of applying BOT model on the Palestinian infrastructure applied in water and energy sector.

1.7 Research Dimensions

The research included the following scopes:

- The objective dimensions: the research is limited to its objective by designing a Palestinian model for BOT contracts in the water and energy sectors. But even though it can form a basis for adopting this model in other areas with some adjustments.
- Human Resources dimension: the research is scoped with its population, workers in the Energy and Water Authority, and businessmen classified as A in chambers of commerce.
- Timeframe: the research is limited to the period between 2017-2018
- Institutional dimension: the research is scoped within the Energy and Water Authority, and businessmen classified as A in chambers of commerce

Chapter Two

Literature Review

Chapter Two

Literature Review

The theoretical framework includes two main chapters. The first addresses the public-private partnerships and the projects (BOT)-requirements and obstacles. The second part deals with experiences of (BOT) adoption projects and infrastructure in Palestine-the water and energy sectors. Illustrations are given below.

Governments recognize the importance of improving and expanding infrastructure services for sustaining economic and social development. Improved quality and service coverage in power and water supply, health and education, sewerage treatment, transport and logistics are vital for countries' economy and the livelihood of its people. Nevertheless, countries faced many when implementing such projects such as the financial limitations. That's why it was important to search for more creative and innovative approaches to implement such projects. (*Economic Coordination Committee(ECC), 2010*). Governments in most developing countries face the challenge to meet the growing demand for new and better infrastructure services. As available funding constitutes the traditional sources and capacity of the public sector to implement many projects at one time remain limited, governments have found that the partnership with the private sector an attractive alternative to increase and improve the supply of infrastructure services (*Engel& et.al, 2007*). Many strategies were adopted by governments such as: privatization, issuing

public ponds, borrowing, appeal for donations, PPP etc. Private sector participation in the development process has become necessary in most of the developed world and developing countries as well. It became the main source of finance for the state-owned local development strategy to and because the private sector's saving stock is high among members of society and can be invested by the private sector (*Abd EL-Razak & Shuaib, 2010*). The substantial investment in infrastructure required in the modern state can be provided through public private partnerships (PPP) and this PPP policy framework will provide the basis for this approach in countries. In order to encourage the private sector to participate in the country's infrastructure development, governments implement a combination of policy reforms, institutional support, incentives and financing modalities in financing, developing and managing future infrastructure development projects. (*PACIFIC ISLANDS FORUM SECRETARIAT, 2006*)

Public-private partnership (PPP) in infrastructure is a relatively new experience in most of the developing countries. So far, only few countries have established institutional arrangements and developed manuals and resource materials in support of PPP development. The absence of such institutional arrangements, resource materials, ..., public officials face difficulties in project initiation, implementation, and evaluation. This makes the general public have some misunderstandings about PPPs. (*Fillippoizzi, 2005, p.*

2.1 Public and private sectors partnership.

The British Commission defined the partnership between the two sectors as "a risk-sharing connection between the public and private sectors based on a common ambition to achieve a desired policy objective of the country" ((*Apostolakis, C & Smith, LR, 2002*). Faulker defines it as a "middle place between public monopoly and full privatization, seeking to integrate the best of both sectors" (*Pongsiri, 2002*). While Khanom, (2010) has defined it as a multi-sectored partnership as "practical arrangements based on mutual commitment, more than any contract between any organization in the public sector and any other organization outside this sector". Ascher defines it as "a process that carries a long-term risk, between public and private agencies, in implementing complex operations to meet multiple needs: public facilities, services, housing, transport, etc." (*Sadran, 2004*).

The Public Private Partnerships (PPP) involves financing the initiation of infrastructure by the private sector, which would otherwise have been provided by the public sector. Instead of the public sector procuring a capital asset and providing a public service, the private sector creates the asset within a dedicated stand-alone business (usually designed, financed, built, maintained and operated by the private sector) and then delivers a service to the public sector entity/consumer in return for payment that is linked to performance. Therefore, the public sector is able to reorient its efforts to serve other urgent social and economic needs. As such, PPP may include an equity joint venture between governments and the private sector. (*FEMIP, 2011*).

The capital and operational expenses incurred by the private investor can be recovered under the PPP modality by charging users for the service provided or via fixed (or partially fixed) periodic payments (annuities) disbursed by the public sector over the concession period, or by a combination of both. PPPs allow each partner to concentrate on activities that best suit their skills (*Economic Coordination Committee /ECC, 2010*). For the public sector this means planning and identifying infrastructure service needs and focusing on developing national, local sector-specific policies, but also to oversee these and to enforce the PPP agenda. For the private sector, the key is to deliver effectively the infrastructure and facilities required by the public sector and consumers at the project level (*Bouachek, 2009*).

The partners in a PPP strategy usually implement joint projects through a legally binding contract agreement to share responsibilities related to implementation, operations and management of the project. This collaboration or partnership is built on the expertise of each partner that meets clearly defined public needs through the appropriate allocation of Resources, Risks, Responsibilities and Rewards (*Rahman, 2004*). It is important to emphasize here that a PPP is not an option to solve the infrastructure problem, but it is a viable project implementation mechanism for a preferred solution option. (*Quium, 2011*)

The researcher believes that the previous definitions may agree that the partnership between the two sectors is a mutual commitment. Public-private partnership is constructive cooperation between the two entities.

This is made in order to achieve mutual benefits, based on a common legal reference framework that promotes long-term development. The adoption of this strategy requires dialogue to overcome overlapping and conflicting interests between the public and private sectors.

PPP: benefits, objectives & advantages

A key advantage of having the private sector provide public services is that it allows public administrators to focus on other priority issues. The private sector, in turn, is empowered to do what it does best, and in particular improve the efficiency and quality of service, ((*Francoz, 2010*). In addition to that, there are many benefits such as:

- A. Development of more infrastructure systems on time and within budget constraints.
- B. Encouraging the private sector innovative design, technology and financing structures, leads to increased international and domestic investments.
- C. c)Joint Risk Mitigation between the two parties.
- D. Ensuring good quality of public services and to be accessible to the majority of the people.
- E. Real financial benefits through a better utilization and allocation of public funds.
- F. This will also help economic growth to increase and create employment opportunities.

Governments worldwide have increasingly turned to the private sector to provide infrastructure services in energy, power, communication, transportation and water sectors that were traditionally delivered by the public sector (*Askar & Gab-Allah, 2002*).

There are several reasons for the growing collaboration with the private sector in developing and providing infrastructure services. That was represented in many objectives and advantages, of this initiative, (*Chinyere, 2013*). Some of them are:

- A. Promote inclusive social and economic development through the provision of infrastructure
- B. Leverage public funds with private financing from local and international markets
- C. Encourage and facilitate investment by the private sector through creating an enabling environment in PPP in infrastructure
- D. Protect the interests of all stakeholders, **including end users**, affected people, government and the private sector.

This illustration shows that, PPP strategy is targeted to provide a wider variety of better quality and timely services through faster project implementation, maximum leveraging of public funds, enhanced accountability and a shift to life cycle costing and infrastructure management of the private sector.

The researcher considers that there are other benefits that may be found in the use of private capital, expertise, and technology in order to reduce the cost of establishing infrastructure projects. Implementation of projects will

be quantum with an increased efficiency rates. This is a strong incentive to adopt the concept of public-private partnership.

Forms of PPP.

Here are some of PPP forms:

- Build, operate, transfer (BOT):
The private sector designs and builds the infrastructure, finances its construction and owns, operates and maintains it over a period, often as long as 20 or 30 years. This period is sometimes referred to as the "concession" period. At the end of the concession period such projects are transferred to the government. (*Ameln, 2011, p.25*)
- Build, Own, Operate (BOO):
PPP project model, in which a private organization builds, owns and operates some facility or structure with some degree of encouragement from the government. Although the public body doesn't provide direct funding, it may offer other financial motivations status. The developer owns and operates the facility independently (*Andrew, 2006, p8*).
- Build Own Operate Transfer (BOOT):
The service provider is responsible for the design, construction, finance, operations, maintenance and commercial risks associated with the project. The service provider has owned the project throughout the concession period. The asset is transferred back to the government at the end of the term, often at no cost. (*Donaghue, 2002, p3*)

- Design Build Operate (DBO):

A design and construction contract linked to an operation and maintenance contract. The service provider is usually responsible for financing the project during construction. The government purchases the asset from the developer for a pre-agreed price prior to (or immediately after) commissioning and takes all ownership risks from that time (*Mortimer, 2004, p2*)

- Built-Own-Lease-Transfer (BOLT): It is a non-traditional procurement method of project financing whereby a public sector client gives a concession to a private entity to build a facility (and possibly design it as well), own the facility, lease the facility to the client, then at the end of the lease period transfer the ownership of the facility to the client (*Shukla & et. Al., 2014, p139*).

- Private finance initiative (PFI):

A typical PFI project will be owned by a company set up specially to run the scheme. These companies are usually consortia including a building firm, a bank and a facilities management company (*Allen, 2001, p10*).

The research erillustrates that partnership is an interaction and cooperation between the public and private sectors based on the exploitation of their human, financial, administrative, organizational, technological and knowledge resources in accordance with the legal contracts based on a commitment to the goals, freedom of choice, connected responsibility and

accountability for achieving economic and social objectives. They have a far-reaching impact on peoples' aspirations so that they can cope or keep abreast of contemporary developments and achieve public objectives and sustainable development.

2.2 BOT projects: concept, objectives, and characteristics,

BOTas described plays an important role in infrastructure development. Several countries have successfully used it to address the infrastructure needs of the economy. It is viewed as a viable option to outsource public projects to the private sector. It has been widely viewed as a pragmatic approach in infrastructure provision in countries where severe budgetary constraints limit government's capacity to provide it (*Llanto, G. ,2008*). The major concepts and applications refer to: design, financing, construction and operation of the facility under a concession agreement. During the concession period, the private sector operates and maintains the facility. At the end of a fixed cooperation period, the ownership, free of any encumbrances or liens, is transferred to the government at no cost. (*ERIA Interim Report, July 19, 2007*) (*Atman, 2006*).

BOT projects: Definition

Muhammed's opinion (*Mohammed. M., 2005, p. 31*), the BOT is abbreviated to three build-operate-transfer terms: construction, operation, transfer or transfer of ownership, which constitute the three stages of the execution of the BOT project. The use of the term transfers or transfer of ownership does not mean that ownership has already moved from its owner

(The state), but what is transferred to the sector or the private party is the legal possession, ownership belongs to the granter state, since the project is built for its own account, as if funding from the private sector, and what is transferred to it at the end of the contract, is the ownership of the project.

In essence, the presence of BOT is in order to improve the welfare of the people, realizing the provision of infrastructure in various fields (*Eventia,2017, p534*).

BOT strategy is a special financing model that was developed to be used in the achieving projects requiring advanced technology, high material resources, and huge investment amount (including the profit to be gained) to the company through the purchase of any goods or services produced by the company during the operational period, by those benefiting from the management or service(*Yerlikaya, G. K,2002, p.25*)

In the broader sense, the BOT model may be defined as the realization of a public structure, investment or service through the financial funding by a private company and its operation by the latter for a period determined by the public, and its selling to public institutions any goods or services, which it has produced during this period, pursuant to a tariff mutually determined by the parties, and its transferring the facilities, which it is operating, in a well-maintained, complete and functional manner, to the public institution at the end of the period(*İmre, E,2001,p.34*).

According to another definition based on contracts executed, the BOT model is a regime where any public service or activity or public works are prepared as project, financed, built, protected by realization of an

investment based on a fixed amount, all expenses being provided for by a private enterprise, under the guarantee and commitment that the country purchases the goods or services produced, and which ensures the transfer and delivery to the relevant public institution or establishment of the facility and management at the end of the period upon amortization of the capital invested and realization of the profit through its operation for a certain period(Sezer,Y,2000,p.5)(Jalal, 2001,63).

The Dubai government defines the BOT system that is a contract shall be under the private sector, to finance and set up service facility instead of the government in exchange for its operation and use its revenues for a specified period before returning ownership of the facility to State (*Government of Dubai, 2010, p. 4*)

The concept of BOT is a contractual concept that reflects the compatibility of two or more wills to create a legal impact over the agreed period. It is also a financial system; because it is a mechanism of modern financing that is based on the idea of project finance by guaranteeing repayment of debts from the proceeds of operating the project without focusing on the owner, as lenders look to cash flow (cash flow) as a source of debt repayment submitted, in addition to the project's assets in the event of the sponsors of the project's inability to repay the debt and accrued interest on them full on time unlike the financing of traditional projects that are based on guarantees with material and in-kind assets (*Hasayem ,2011, p. 10*) (*Ali, 2001, p. 76*)..

Now the researcher can define Build-Operate-Transfer (BOT) project as a concession contract in which a principal grants a concession to a concessionaire who is responsible for the financing construction and operation of a facility over the period of the concession before finally transferring the facility, at no cost to the government, as all operational facility.

We conclude from the foregoing that the elements of BOT can be summarized in:

- Design and construction of the agreed project, including studies, construction and equipment at the expense of the private party financed by the project.
- Operate the project by the investor and exploit it commercially for the agreed period so that it can recover its costs, with achieving an appropriate profitability rate.
- Ownership transfer of the fixed assets of the project to the contracting government that owns it at no charge or at any agreed price at the end of the contractual period.

Build-Operate-Transfer Characteristics:

BOT projects have unique characteristics that distinguish them from other project delivery methods. The following are some of their unique characteristics:

1. BOT projects are financed on a project finance basis with limited recourse. Typically, in limited recourse financing, the lenders provide debt

to the concession company solely based upon expected cash flow/revenue generating capacity of the project. Financing is provided on the merit of the revenue generating capacity of the project rather than the assets of the concessionaire company (*Iossa and et. al., 2007*), BOT projects are complex structures comprising multiple interdependent agreements among the various participants and associated with uncertainties and high risk. BOT projects transfer the risk to the private sector, and can be applied to any sector of the economy. But, it has been used widely in power plant sector, transportation and telecommunications (*Jalaluddin Shah, 2001*).

2. A key characteristic of BOT projects is raising finance entirely by the private sector without the involvement of government. The private sector is fully responsible for a design, construction, financing and operation and maintenance (*Kumaraswamy, 2001*).

3. BOT projects are typically large-scale infrastructure projects transaction costs amount on average 5 to 10% of total project cost (*ACAR, 2006*).

Purposes of implementing the Build-Operate-Transfer model

Governments are increasingly turning to the BOT project as an alternative additional source of funding to meet the funding gap. While recent attention has been focused on fiscal risk, governments look to these for other purposes, (*American Society of Civil Engineers (ASCE), 2014*) mention to these Purposes:

- Exploring BOT project as a way of introducing private sector technology and innovation in providing better public services through improved operational efficiency.
- Incentivizing the private sector to deliver projects on time and within budget.
- Imposing budgetary certainty by setting the present and the future costs of infrastructure projects over time.
- Utilizing BOT projects as a way of developing local private sector capabilities through joint ventures with large international firms, as well as sub-contracting opportunities for local firms in areas such as civil works, electrical works, facilities management, security services, cleaning services, maintenance services (*Wang, 2000*).
- Using BOT projects as a way to increase levels of private sector participation (especially foreign) and structuring BOT in a way so as to ensure transfer of skills leading to national champions that can run their own operations professionally and eventually export their competencies by bidding for projects/ joint ventures (*Larry, 2006*).
- Supplementing limited public sector capacities to meet the growing demand for infrastructure development (*Sri Eddien, 2001*).
- Extracting long-term value-for-money through appropriate risk transfer to the private sector over the life of the project – from design/ construction to operations/ maintenance (*Maaadidi & Taei, 2012*) (*Abdul Azim, 2001*).

The benefits of BOT projects:

In addition to the above mentioned advantages, there are many incurred benefits as:

- It represents a sound strategy for handling the deficit of government funding (*Hasbo, 2009, Hamada, 2014&Nassif, 2011*). The study considers that the issue of financing infrastructure projects is the main reason for resorting developing countries to BOT strategy adoption. Besides that , it reduces the burden on public budgets.

This strategy creates means to reduce the growing external indebtedness, (*Saleh, 2006*). The study considers that the private sector's financing of infrastructure projects under the supervision of the state helps limit the resorting of these countries to external loans.

- Reducing inflation and saving hard currency (*Toobar, 2008, p. 40*). The study considers that the process of financing the BOT projects allow the injection of funds in hard currency, which allows curbing inflation rates.
- The reduction of unemployment (*Nassif, 2011, p. 146*) (*Bahaji, 2008, p. 57*). BOT system expands the establishment of new projects.

BOT strategy has spread in many countries and its application has become a welcomed alternative to finance public projects in the developing countries as compared to loans and foreign aid. Therefore, in order to maximize the advantages of this strategy and reduce its negative aspects. To this purpose, it is necessary to enforce laws regulating all aspects related

to it, rather than leaving it to the absolute estimation of the various parties concerned.

BOT strategy as said, is given within some differences of focus in its name, the table (1) shows such variations and similarities and differences of such naming.

Table (1) BOT concepts focus

Distinguish between the BOT contracts and other contracts	Similarities	Differences
- BOT contract and financial leasing contract	- Both contracts are considered as means of financing projects. - Both the - contractor and the lessee shall manage and invest the project during the execution of the contract	- The lessee shall have the option to purchase the machinery, equipment, and real estate or return it to the lessor at the end of the contract. In the BOT contract, the project company shall return the facility to the contracting authority at the end of the contract. - The BOT contract is often executed for the benefit of the management while the lease contract is executed in favor of a private party, and the BOT contract usually deals with a public facility contrary to the financial leasing contract. - The lessor (government) in the financial leasing contract creates the project and then leases it while in the contract the project company is the project builder.
BOT contract and mixed economy company	- The BOT contract and the mixed economy company are two methods of managing public utilities. - The two approaches are similar to the use of private	- The project company is formed in a pot contract from one or a consortium of companies. It may be involved in setting up several projects around the world, while the subject of the mixed economy company is the management of a particular general facility in the company's basic law. - The ownership of the project funds shall be for the State in the pot contract, while the ownership of the company shall be in the manner of the mixed economy company,

	sector methods in the management of public utilities.	except for the disposal of some funds belonging to the State. The duration of operation in the BOT - contract is specified in the contract under the mixed economy company, which is limited to the age of the company and applies in the contract of pot rules stipulated in the contract, while applying the rules contained in the .Basic Law of the mixed economy
BOT contract and contract of usufruct	- The BOT contract and the right of usufruct shall include a temporary right for a specified period, terminated by the State The - beneficiary and the project company invest the money subject to the contract or the right of .usufruct in the agreed period.	- The right of usufruct refers to something specific, while the subject of the BOT is connected to a public facility, and the user does not allow the use of the object of use contrary to the Bot contract, which allows the public to benefit from the services of the public utility. - The two contracts differ in that the project company transfers ownership of the project to the state, while the user delivers it to the owner.
BOT contract and public works project contract	- Both contracts aim to achieve public benefit by operating the facility after completion. The ownership - of the project in both contracts will be for the contracting administration	The contract of the BOT is self-financed - while the public works contract is funded from the general budget. The financial consideration obtained by the project company in the pot contract is from the operating revenues of the facility. In the contract of the public works project, it is the price paid by the administration for construction and administration.

Source: *Sohaib, saboa (2013)., pp. 40-42*

BOT Contractual Structure

There are many major components to any BOT contractual project, all of which have particular reasons to be a part of the contract. The major components are:

1. Government Agency

This part refers to a governmental organization which manages the operations of public utilities that provide services to the public which are the main concern of the state. The state has never abandoned responsibilities towards the state's infrastructure projects (*Alhamoud, 2010*) The governmental organization as a pivotal party, grants the sponsor "the concession", the right to build, and operates the facility to the sponsor, and often acquires most or all of the service provided by the facility (*Canlas, et al.,2006*) for a specific period.

2. Sponsor

The sponsor (investor) is the party, usually a consortium of interested groups (typically including a construction group, an operator, a financing institution, and other various groups) which, in response to the government invitation, prepares the proposal to finance the construction, and operates it under certain conditions (*Samurai,2006*). This party is willing to cooperate with the government organization for achieving mutual benefits.

3. Construction Contractor

The construction company may also be one of the sponsors. It will implement the construction and completion of works on time, within

certain budget and specifications. Risks implied here can be sizeable and the lenders will wish to see a construction company with a balance sheet of sufficient size and strength with access to capital that gives real substance to its completion guarantee (*Khateeb, 2014*) (*Vaitheeswari& Nidhu.2017*).

4. Operation and Maintenance Contractor

The operator will be expected to sign a long-term contract with the sponsor for the operation and maintenance of the facility. Again, the operator may also inject equity into the project. (*Roulette,2004*).This probably has a lot to do with the fact that operators tend to accept little risk in the form of up-front capital or expenditure. An operator simply anticipates making a profit from operating the infrastructure more efficiently than an equivalent government runs project. (*Yusuf, 2005*)

5. Financiers

In large-scale projects, there is likely a source of financing providing organization (as banks) since the required amount will be huge. The banks will require insurance over the infrastructure that will be established The same or different banks will often provide a stand-by loan facility for any cost overruns not covered by the construction contract (*Sri Eddien,2000*) (*Hassani, 2007*).

6. Equity Investors

It is always necessary to ensure that investors willing to participate in BOT have sufficient powers to participate into the relevant contracts and meet the obligations under the contract (*B. Canlas, 2006*).

7. Other Parties

The other parties such as insurers, equipment suppliers, engineers, design consultants, lawyers, financial and tax consultants will also be involved in an infrastructure project (*Delmon, 2005*).

Argyris G. Kagiannas, K. D. (2003) points out that the main stakeholders in every BOT project are identified as following:

1. Principal: The principal is usually a governmental body that recognizes the need for a public facility but is unable to financially support the project.
2. Concessionaire: The concessionaire is the owner of the facility during the concession period and gains profits on the initial investment through the usage of the facility.
3. Investors: Financing is supplied by the private sector and the investors include both shareholders and lenders.
4. Contractor: The contractor is responsible for the construction of the project and for hiring subcontractors, suppliers and consultants.
5. Operator: The operator is in the concessionaire's service and manages the operational stage of the facility. Figure number(1) and (2) show the complex relationship among different actors in a BOT

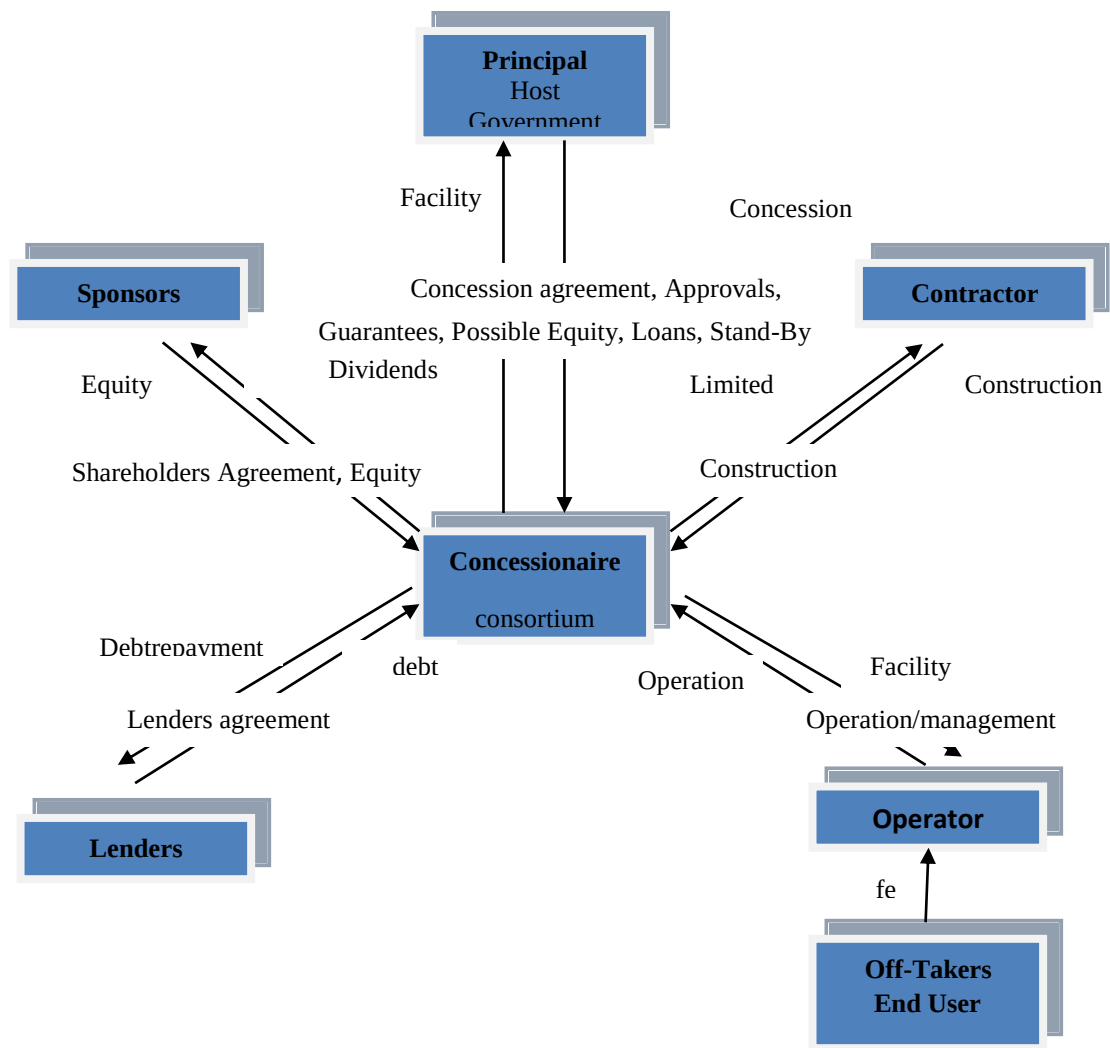


Figure (1): relationship among different actors in a BOT project(*Dante Canlas and Gilberto Llanto,2006*)

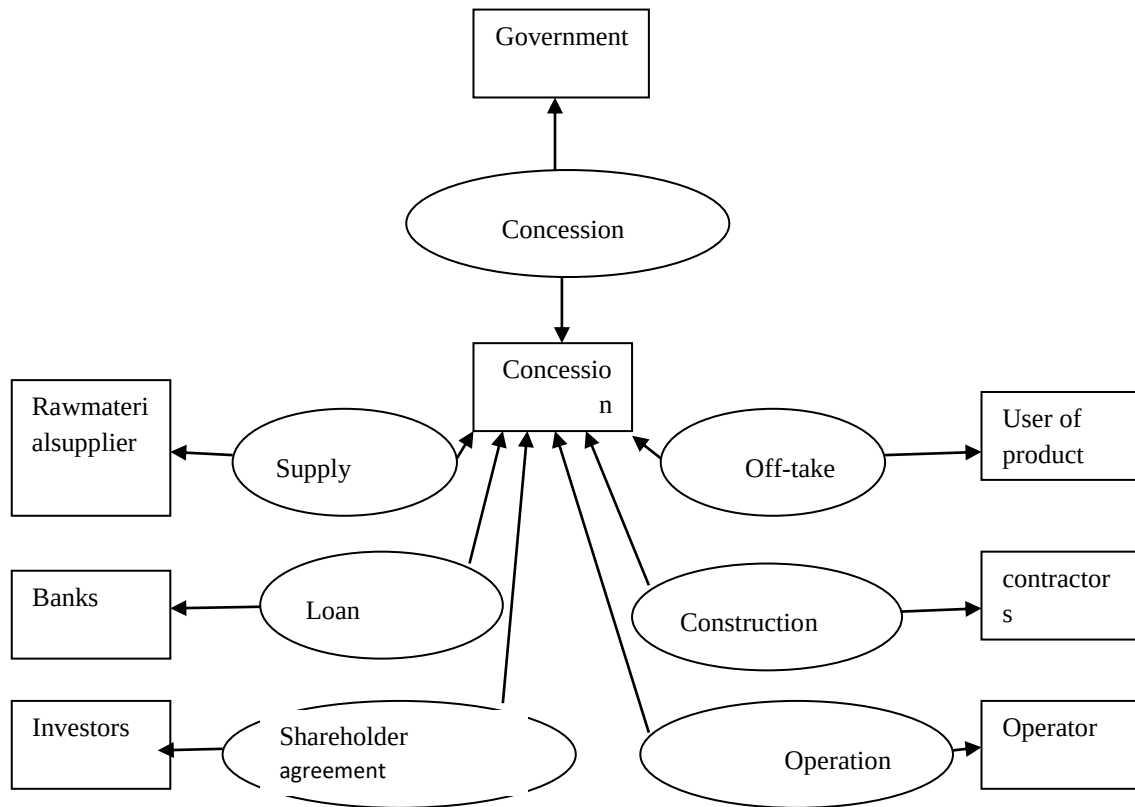


Figure (2): Typical contractual structure for a BOT project (Mohan Kumaraswamy, 2001) ·

BOT mechanism is a complex structure comprising multiple, inter-dependent agreements among various participants. Typically, the government grants concession to the private sector (concessionaire). The concession is awarded through concession agreement. The concessionaire is responsible for design, finance construction, and operation of the facility. The concessionaire retains the ownership during the concessionary period, which can be normally 10-50 years, after which the title of ownership is transferred back to the government (Navarro, 2005) (Malih.2015).

BOT agreements

A BOT project has the following agreements:

Concession Agreement

The concession agreement is made between the government and the concessionaire. It is regarded as the "core" of a BOT project as it determines the commercial viability and profitability. A concession agreement includes The concession period, the construction duration, toll/tariff structure with toll/tariff revision provisions, rights and obligations of both parties, and the Government guarantees: The host government offers guarantees to the project promoters (concessionaire) like supporting loans, guarantees of minimum operating income etc.(Cotula,2007) (Lashin, 2010).

Loan Agreement

The loan agreement is made between the lenders (i.e. Banks) and the concessionaire. The Bank provides the necessary debt to the concessionaire. This debt is the primary source of financing a BOT infrastructure project (Cotula, 2007).

Shareholder Agreement

The shareholder agreement is made between the equity investors and the concessionaire describing how the company should be operated, along with shareholders' rights and obligations. The agreement also includes information on the management of the company and privileges and protection of shareholders. (Delmon, 2009).

Construction Contract

The construction contract is made between the contractor and the concessionaire. The contract is usually let under fixed price turnkey contract (*Cotula, 2007*).

Supply Contract (Equipment/Material)

An agreement is between the supplier and the concessionaire. The supplier in a supply contract is often government agency that supplies raw material (*CIdb, 2005*).

Operation and Maintenance Contract (O & M Contract)

An agreement is made between the concession company and the operator. The operation phase plays a very important role in the success of BOT project since success is tied to its revenue generating ability. The operation phase of BOT projects presents the great management challenge and demands the highest level of attention (*World Bank Group, 2016*).

Successful standard stages of BOT's project

Jilali, (2010) viewed several investigations which dealt with the standard stages of a successful BOT project, including the following

Stage I: is the planning and preparation. At this phase, the items of the proposal to be completed are: feasibility study, specification of the project, production capacity and location, selecting sources of raw materials, identification of markets for disposal of produced goods, preparation of project documents and conditions books, inviting competing companies to prepare for submission Offers, and awarding the project to an investor (the

company) that presents the best offers and the government signs the contract with him.

Stage II: The preliminary phase of implementation where the investor implements the project through the availability of funds, the conclusion of contracts with sub contractors.

Stage III: This is the actual stage of implementation of the project. In this stage contractors and suppliers fulfill their obligations and set up the project units, install the equipment taking into account the required specifications. The investor receives the project effectively from its implementers. The State or the Government representatives monitor project implementation to ensure an effective performance.

Phase IIII: Operation and maintenance phase. At this stage, the project is fully operational and the necessary maintenance work is carried out. The transfer of technology and the training of workers on modern technical means are implemented.

Phase IIIII: Transfer of ownership of the project to the granting state, this stage is the last stage of the project. In this stage the government retains the ownership of the project. It ensures that the project has all its assets in good working condition. The project then becomes part of the public sector managed by the state.

aljmal, (2003) has reviewed these stages with some other details as follows:

1. The State shall identify the infrastructure projects that it desires to build or update and invite the different companies who are willing to

carry it out in accordance to B.O.T. strategy. In order to encourage fair competition, the state may conduct feasibility studies for such projects.

2. A group (or several groups) submit their offers mentioning the concession period. The offer includes engineering designs of the project, the financial studies, the operational plan and facilities that are required by the government and the guarantees that the government must provide measures to protect investors from various types of risks.
3. The Government evaluates the submitted offers involving a team of its specialists. The government, then negotiates specific terms and conditions of the project. In case of agreement, the official approval shall be taken by the competent authorities in the State and the agreement is signed.
4. The investor makes the funds available, through its own arrangements.
5. After the construction of the project, the operating companies manage and maintain the project. In this stage revenues are collected from its users.

The stages of successful BOT project completion in the study (*Abdel Aziz, et.al., 2007*) include:

- 1: The identification stage- including identification of the project, optimal funding structure, and preliminary feasibility studies, in addition to appointing the project implementation team and the general manager of

the project, and the decision of the government to implement the project by its system.

- 2: The phase of government preparation for the general auction, which includes: procedures for preparing the bid and announcing it, ensuring the seriousness, expertise and capabilities of the developed companies financially and technically, and contracting the project (preparing the draft project in general, in preparation for signing it by a private party later, after the general bid is awarded to a company) or preparing tender documents and specifying the criteria and conditions for evaluation of the various tenders developed.
- 3: The stage of preparing potential bids by the sponsors. These include formation of the project consortium or establishment of the project implementation company, conducting a detailed feasibility study, identifying potential participants or partners in the project,
- 4: The selection process by the government. This includes: evaluation of bids and offers, requesting amendments or clarifications, and awarding a tender to a company or consortium of the best bidder available.
- 5: The project development phase, which includes establishing the project execution company, providing capital contributions for financing, signing the necessary loan agreements, financial closing, signing the contracting contract, signing the supply contract (equipment and raw materials), signing the insurance contract for the project.
- 6: Implementation of the project (construction phase) - includes:

Building and installation of equipment and the operation of preliminary operational tests, government approval and approval of the project implementation company, technology transfer and operational capacity building (human resources training) with the periodic evaluation of the project to ensure the efficiency and effectiveness of all its operational activities at the start of the actual operation of the project.

7: The operation phase includes the operation and maintenance during the period of the contract with the periodic inspection of the activities and operations of the project to ensure the efficiency and effectiveness of its performance, the continuous training of human cadres, the transfer of modern operational techniques to the host country and help its human cadres to build high capacities before embarking on transfer of ownership.

8: - Transfer of ownership - includes:

Identify the optimal transfer method from among the various alternatives available and transfer ownership to the public sector.

After studying the stages and previous studies, the researcher came out with the proposed stages in Table (2) of completing the successful BOT project as follows:

Table (2): stages of completing the successful BOT project

1	Preparatory stage	The stage of preparation and the selection of the investor and the parties in it are the contracting government authority - the governmental authority granting the license - the investors submitting the tenders in order to determine the project and its specifications and means of financing and preparation of preliminary economic and financial feasibility studies
2	Development stage	It includes several parties as the contracting government -the shareholders - the project company - the financing institutions - the contractor - the supplier - the insurance companies - other parties to form the project company and the completion of the licensing agreement and contracts and contracts of finance, and contracts of entrepreneur and supply.
3	Construction and establishment of the project	The project company, the contractor, and the contracting government are principal parties for the construction and preparation of the facility for the ongoing operation, testing and acceptance of the facility
4	Current operation	The project company - the contracting government - the operator are the parties to the operation and maintenance during the period of licenses and commitment, determines the role of the state in the inspection and control, training and transfer of technology and renovation.
5	Termination of license or commitment and transfer of assets	In which the parties are the financing institutions - the contracting government - the project company - the operator in order to follow up and prepare the transfer procedures. The project shall be delivered without any mortgages or according to the agreed situation and compromise of any financial matters.

BOT contracts requirements

There are many requirements that the relevant aspects of the BOT projects need to consider in preparation. We will address the requirements that the government must provide in the BOT projects and the requirements that the sponsoring company must ensure to provide, and study the possibility of providing a legal framework for them.

Requirements must be provided within the government side of the BOT projects

Good practice dictates that government policy, statutory and regulatory frameworks should be in place to enable long-term project under a BOT scheme. Good regulation largely relates to whether, and to what extent, the regulatory process helps achieve government policy objectives for the infrastructure sector, whatever those policies may be. However, one should bear in mind that regulation is only part of an entire sector reform package that might encompass sector restructuring, corporatization, commercialization, and private sector participation (*Canlas, & et al., 2006*). Under a BOT scheme, it is necessary to ensure that the construction and operation is performed according to existing regulations and laws, as well as to regulate the allocation and split of risks between the developers and the off-taker, for instance, assuring the take-or-pay principles (*Tenne, 2010*). In countries where no regulator or regulatory regime has been established, the terms and nature of the commercial agreement between the private operator and the grantor becomes even more important, particularly considering the impacts of the future introduction of a regulatory regime. There must be a clear division of operational responsibility between the private and public sector. It is expected that such statutory and regulatory frameworks may not be extensively in force in developing countries, in addition to the lack of knowledge and experience of the off-taker and/or host country governmental bodies and entities in charge, thus imposing certain

constraints and obstacles to both the developer and the lenders (*Wolfs & Woodroffe, 2002*).

During the negotiation stage between host government and concessionaire/promoter, a proper agreement should be achieved in order to mitigate currency risks; host government should provide guarantee for currency mismatches and fluctuations to avoid any defect in project implementation and operation. (*S.Q. Wang, &etal, 2000*)

Requirements that must be provided by the sponsoring company for the BOT projects

BOT Projects pre-qualification requirements include the following details like Profile of company and associates, showing the financial capacity of the firm/consortium, annual turnover, financial management, technical capability, available human resources, organization, present business activities, type of registration (memorandum of association, deeds) and experience of similar type of project. Details of credibility/capability to undertake this type of work in order to make the project viable in terms of planning, construction, commissioning and management. Brief methodology for financing proposed funding arrangements to be lined up for undertaking the project, both local and foreign financing. (*Khan, 2008*). The Suggested marketing plans and strategy (*Andreas, W, 2004*). In addition, the submission of the above mentioned documents usually enables the government to shortlist and pre-qualify the interested enterprises in the project. The documentations evidence must be furnished

before the final acceptance of the pre-qualification (*Irem, D.O., and Talat M.B., 2000*).

The Obstacles of Adopting BOT

A successful implementation of a BOT infrastructure project requires in-depth analysis of all aspects related to economic, environmental, social, political, legal, and financial feasibility of the project (*Ahmed&etal., 2007*).

As other human activities, BOT projects face numerous kinds of obstacles.

The various economic and legal literature indicates that the partnership projects between two sectors projects financed by the private sector according to the BOT face drawbacks and normal risks that are controlled by partners, and unusual ones that are outside the control ability of the partners. Table (3) illustrates the most important risks:

Table (3): Risksfacing the implementation of Build-Operate-Transfer (BOT) in infrastructure projects

Reference	Most dominant BOT risks
Mai Tobar, 2008, pp. 48-52	Risk of non-acceptance of bid, risks of construction and completion, risks of feasibility preparation of the project, risks of increase in the time taken during construction, operational risks, political risk, transfer risk, legal risk.
Kosie,2008,pp23-24	Construction risks, external exchange risks, environmental risks, risks of undisclosed defects, political risks, Residual value risk, risk of inflation, input and production risks, demand risks, and Technical risks.
Taha Mohammed Mohammed Abu El-Ola, 2007, p. 14-138	Risks arising from events controlled by the parties concerned, political risks, construction and operating risks, trade risks, exchange rate & other financial risks.
Ahmed Rashad Mahmoud Salam, 2010, p. 166-179	Risks of specifications, risks of resources (inadequate or underutilization), risks of delay, Operation and maintenance risks, technical efficiency, host country environment risks(currency, changing the regulations, taxes, tariff), contracts interpretation risks, non compliance to obligations by the parties
Elisabetta,2007,p18	Planning risks, poor specification, design risks, construction risks, risk of changing general needs, scheduling, operational procedural risks, legislative risks, financial risks, and residual value risks.
Michel,2003,pp52-56	Return risks, construction risks, exchange risks, contractual, procedural, political & environmental risks, general acceptance risks, sustainability risks.

There have been many previous studies which dealt with the contracts of BOT. A number of international and local studies were reviewed, focusing on the orientation towards partnership, as many studies believe that BOT contracts come within the context of the public-private partnership. Below is a brief of some of them.

Many international studies have examined the public- private sectors partnership to the provision of public services. *Bognetti and Robotti, (2007)*

conducted a study (*The Provision of Local Public Services Through Mixed Enterprises*) reviewed the Italian experience in providing public services via private sector. It concluded that the private sector partner should be selected through general bids procedures and allow for the concept of large economies. Other studies have handled partnership initiatives with the private sector in the European Union countries with reference to the Spanish Government. The study noted that there is a need for developing the accounting standards for such partnership. It also focused on the need for the establishment of regulatory bodies to prevent monopoly excesses (*Torres and Pina, 2001*).

In developing countries, there have been some trends towards partnership. The Indian experience in this context concluded that the partnership should play an important role in providing public services in the light of the pressure to provide basic services in India (*Nallathiga, 2007*). A number of researchers, in France, used the original database of about 5,000 French local authorities, to examine the choice impact of a public-private partnership model of water supply and distribution in France. The study concluded that there was no random and considerable increase in the average prices of services provided to consumer (*Chong, et al., 2006*). Some studies have been directed to show the most attractive aspects of the private sector in partnership projects in terms of better technology used in project management. They showed an increase in the level of public interest in such partnership which keep many organizational and financial obstacles away. The experience showed a reduction of the basic cost of the

public sector. The negative impact of partnership was related to several factors, such as: lack of experience among concerned parties, excessive treatment of basic services, and the high cost of joint projects in terms of time and money, make outcomes of partnership projects less attractive (*Bing Li&et.al., 2005*). On the other hand, another study found that, partnership project funding systems have the potential to become an important tool for promoting and revitalization of urban areas. In Poland, recently launched study discussing public-private partnership found that close cooperation between citizens and authorities is a necessity for achieving such activation (*Mullins, et al., 1999*).

In the Middle East studies on the public- private sector partnerships in water sector in Algeria, Egypt, Jordan, Morocco and Tunisia. A review to those studies reveals that, the involvement of the private sector doesn't always lead or systematically increasing the efficiency of water supply services. Such conclusion is owed to the weak institutional framework. Other studies on water projects in 60 developing countries implemented between 1990-2004 through checked several factors, like the protection of property rights (*Pérard, 2008*). Ranasinghe (1999) studied the feasibility of private sector participation in water supply projects in Sri Lanka. He concluded that the best option available to the Government is by using (BOT) arrangements (*Ranasinghe, 1999*). Another study clarified the concept and characteristics of the BOT contract concluded the need for clarifying formulas for legitimizing BOT contracts. (*Abu Gouda, 2009*).

However, it should be noted that the above literature review contains different opinions which summarize the positive and negative experiences. Below is an in-depth view of certain studies pointing out specific obstacles as: administrative, financial, technical, social, political and legal.

Administrative Obstacles:

Administrative obstacles are related to performing management functions in relation to BOT operations. Below is a brief summary of some research finding related to administrative obstacles. The followings form threats to the adoption of BOT:

- ✓ Project planning in build operate and transfer(BOT) project is a complicated decision making process because the model has a complex financial and organizational structures, which is influenced also by the socio economic environments in the country (*Irem and Talat, 2000*).
- ✓ Different designs reflect different risk control strategies for completion time overruns (*Ye and Tiong, 2003*).
- ✓ The incapacity to run the project smoothly results into failure to complete the project within budget sanctions within timely manner, (*Haarhoff,2008*).
- ✓ Lack or shortage of an able local professional work force and sub-contractors to support BOT operations (*Barnier,2003*).
- ✓ The difficulty to identify the possible contingencies, events and issues that may arise during strategy adoption because of the long-term nature of BOT projects. Consequently, a lot of associated and anticipated

complexities will be lead to negative impacts (*world Bank group, PPP IRC, pp:6-8*).

- ✓ The challenge to bring about stakeholders' agreement on the various issues of BOT. As there are many interests of the various parties may contradict with each other. This will adversely affect the performance and funding prospects of the project (*El-Gohary et al. 2006*).
- ✓ BOT bidding process is regarded as lengthy and complicated one. For example, bidders are required to prepare tender proposals attached with a bundle of additional materials, which may take up to 3 to 4 months. Additionally, several lengthy negotiations will be required for the formation of the contract. This can slow down the bidding process (*Chan et al. 2006*).
- ✓ Private sector will also expect enjoying a significant level of authority over operations, if they accept significant risks (*world Bank group, PPP IRC, pp: 6-8*).

Studies on the administrative aspects: Sabri examined the partnership contracts for successful systems of public-private sectors partnership in providing health services in the Palestinian situation (*Sabri, 2015*). The Philippines experience using the BOT contracts helped in presenting the most important administrative drawbacks which formed an obstacle while applying projects using BOT strategy (*Gilberto M. Llanto, 2008*). Besides, Ghanem examined the private sector which benefited from the economic climate created by the peace agreements between the Palestinians and Israelis (*Ghanem, 2009*). Jalaluddin talked about the feasibility of

implementing BOT delivery system in Saudi Arabia, assessed the impact of obstacles, success factors and mechanisms for implementing this strategy. It found that there is not enough awareness among owners and contractors regarding the concept of BOT, and having no independent regulatory body for those contracts (*Jalaluddin Shah, 2001*).

Political Obstacles:

Political obstacles are issues related to the political situation prevailing the country. Some of those issues may form obstacles at a certain point of time. Below is a brief listing of the outcomes of research in concern to this type of obstacles.

- ✓ Additional political constraints can be associated with the risks of nationalization, a succeeding government repudiating the acts of the prior government. Various governments have their own policies regarding foreign currency restrictions, which will definitely influence project efficiency when imports are needed (*F. Lokiec & G. Kronenberg, 2001*).
- ✓ Another common complaint by the public is the high tariff charged for the services provided. More often, the private sector would face political uphill in raising tariff to a level sufficient to cover its costs and earn reasonable profits and returns on investment. The participation of the private sector to provide public service will undoubtedly bring innovations and efficiencies in the operation, but

may produce a fear of downsizing in the role of public sector (*Li 2003, Li et al. 2005b, Zhang and AbouRisk 2006*).

- ✓ Private firms will also want to know if rules of the game are to be respected by government to come. Nationalization in this regard might be a critical fear to investors.
- ✓ Governments can take action to improve risk distribution environment through transparency in the handling and disclosure of information. The good implementation of labor laws and regulations should take into account the public interest in parallel with the rights of investors.

Studies on the political aspects: (Khan, A.H., Jamil, M., and Sattar, M., 2008: p.94) mention the major constraints faced by the stakeholders, these complaints comprise political, economical, ecological, technological, social, environmental and ecological. In the last twenty years, the political scenario of Pakistan has been under notable transition. The political instability remained as a serious hurdle in the formulation of various infrastructure development reforms like BOT, and shows the major political constraints in BOT Projects in Pakistan. Other studies have confirmed that a stable political environment in the relevant developing country is a mandatory pre-condition for the successful implementation of BOT projects. Private sector sponsors will not be willing to spend the substantial amounts money and the timeframe required to put together a BOT project, and after that remain at risk for the 10 to 25 year periods duration that are typically required, if they cannot count on political

stability and continuity over this period (Lokiec, and Kronenberg, 2001: p.3).

Legal Obstacles:

The legal and legislative frame is very critical to the adoption of BOT since it controls the process from the initiation of the project to the last minute of completion of the project. The most important factor here is contract affairs. Below is a brief summary of the outcomes related to this component:

- ✓ A clear legal and regulatory framework is crucial to achieving sustainable solutions to issues arising out of BOT adoption (*World Bank group, PPP IRC, pp: 6-8*). Changes in laws such as articles related to quality of the water supply legislation and regulations, or land property concession, obtaining license and permits, etc. (*F. Lokiec & G. Kronenberg, 2001*) may pose a lot of challenges to all parties concerned since it implies a lot of contradicting interests. In this context the status of judicial courts plays a critical role and necessitates investors and government to pay a lot of concern to it.
- ✓ To a certain extent, there would be less employment of opportunities if no regulatory measures were implemented (*Li 2003, Li et al. 2005b, Zhang and AbouRisk 2006*).
- ✓ BOT project exerts unprecedented pressure on the legal framework as it plays an important role in the economic development, regeneration, and mechanism for developing infrastructure. Still, some countries do not have a well-established legal framework for BOT projects and the

current legal framework is only supposed to deal with the traditional command and control model. Although BOT involves a great deal of legal structuring and documentation to deal with potential disputes among BOT parties, legal framework is still lacking protection of public interests vs. legitimate rights of private sector. Without a well-established legal framework, disputes are inevitable (*Satpathy, and Das, ,2007*), if the process really starts and investors are attracted.

Studies on the legal aspects: Many studies have dealt with the legal requirements of the BOT contracts. Some studies have found that the availability of partnership laws and regulations is one of the major requirements for BOT traits. (Barghouti, B., 2009). While other studies examined the available mechanisms for resolving disputes between the parties of BOT contracts. They concluded that there is ambiguity in the legal side of forming this contract.

Other studies focused on the contractual approach. In Algerian experience, focus was paid on the role of contracts in lifting the economic burdens as they provide a legal framework for financing of infrastructure projects. Those contracts were characterized by some complexity as a result of diversity of objectives, mainly if funding is combined with administration aspects (*Sohaib, 2013*). In the Jordanian experience, studies stressed the absence of legislation that regulate BOT contracts. That stressed the need for a special law to ensure the success of this initiative. This has led to new terms and conditions in BOT contracts (*Alagarma, 2013*).

Financial Obstacles

The adoption of BOT may involve many financial obstacles; some of them are highlighted below:

- ✓ Economic Challenges are mostly related to the facility's operation which consist of materials supply, labor supply, equipment availability, inflations, tariffs, fiscal policies and exchange rates (*Florence&Linda, 2006*) (*Abu Bakar, & et al., 2010*).
- ✓ BOT adoption requires huge funds to finance the establishment of a wide spreading infrastructure. To make those amounts available is a challenge itself since it costs millions of dollars, a process that may involve many banks and financial institutions. It may create poor appetite of international commercial banks and finance markets and lack of experience of local financial institutions (*Merna and Njiru, 2002*).
- ✓ The fluctuations in currency in use is considered as an austere problem in international transactions (*Bing Li, A. ,2005*) (*N.J. Smith, 2003*) (*Wang, & et al.,2000*).
- ✓ The Interest Rate obstacle is also a constraint, which means that the interest rate will affect the project performance. Any fluctuation in the interest rate will definitely affect the lenders. An appropriate interest rate should be agreed upon beforehand. The lenders have to pay extra cost if the interest rate becomes high or benefit them if the interest rate becomes low. More foreign investors or private sector

could be attracted by providing interest rate guarantees by the host government in the BOT project (*Wibowo, A., 2004*).

- ✓ The Equity Risk means that the Performance of the concessionaire is crucial in seeking funds to implement a BOT project. Usually, equity risk is related with the performance of the company which is measured by its share price (*S. Ye, & R.L.K. Tiong, 2003*). The higher the share price goes, the better benefit shareholders earn, but the lesser challenges facing a prospective sponsor are estimation of project costs, projection of revenues during the concession period, and the selection of an appropriate financing strategy (*Johnd and Isr, 2003*). Less profits and equities will adversely affect the prestige of the concessionaire (investor).
- ✓ Hedging the local currency is possible, but it implies risks in some cases, the charges associated with this action are extremely high and such tenor will be relatively short, not covering the loan tenor (*Aziz, 2013*). Such situation will make the investor rethink if he is able to encounter such risks or not.
- ✓ Development, bidding and ongoing costs in BOT projects are likely to be greater than for traditional government procurement processes. Therefore, the government should determine whether the greater costs involved are justified. Methods for analyzing these costs, looking to the Value for Money becomes inevitable. There is a cost attached to debt, finance will only be available where the operating

cash flows of the project company are expected to provide a return on investment (*world Bank group, PPP IRC, pp:6-8*).

- ✓ Some projects may be easier to finance than others, provided if there is proven technology involved, and/ or the extent of the private sectors obligations and liability is clearly identifiable.
- ✓ Some projects will generate revenues in local currency only (e.g. water projects) while others (e.g. ports and airports) will provide other international currencies, this involves constraints of local finance markets (*EBRD,2010, p7*) and mainly exchange rates fluctuations is a critical issue in this regard.
- ✓ Other economic constraints are related to fluctuations in the base interest rate, the inflation indexes that affect the debt service, the returns to the developers, construction, operation and maintenance costs (*EBRD,2010, p7*).
- ✓ Lack or shortage of raw materials supply, construction equipment, machinery, tools, consumables, etc, impose encumbrances on construction resulting in delays, increased need for logistics arrangements, and increased costs (*Younos,2005*).
- ✓ There is no unlimited risk bearing, investors are cautious about accepting major financial risks beyond their control. If they bear these risks, then it will be reflected in service price. Private firms will also want to know if rules of the game are to be respected by government as regards undertakings to increase tariffs/fair regulation, etc (*world Bank group, PPP IRC, pp: 6-8*).

- ✓ BOT project arrangements are complex and involve many parties with conflicting objectives and interests. Hence, BOT projects often require extensive expertise input, high costs and take lengthy time in deal negotiations. The high transaction costs and lengthy time may not represent good value to all parties, as a result, the deal may not materialize in the beginning or may falter in the end. BOT projects may incur higher transaction costs than those under the conventional public sector procurement. The legal and other advisory fees included are involved in all stages of a BOT project. The potential high transaction costs may have a negative impact on the objective of securing the best value Environment to BOT adoption. (*Chan,et.al., 2006*).
- ✓ The nature of BOT projects is complex which requires inputs from many parties of different types of expertise. Therefore, investors think whether the project is economically viable to cover such costs.
- ✓ Common problem encountered in BOT projects is, the high bidding costs, which is owed to increasing project complexity and protracted procurement process. Lengthy negotiations and especially the cost of professional services may increase the bidding costs further (*Chan et al. 2006*).

Studies on the Financial aspects: Some studies focused on financial aspects of BOT highlighted the financial risk and cash flow risk (Yang-Cheng Lu et al, 2000). Some search for financing public-private partnership and its role in providing public money as an alternative to privatization (Eduardo&

et al, 2011). The Korean experience in financing and evaluating the financial feasibility of BOT project in infrastructure by looking at the project properties, which is helped in determining the decision of investment in BOT projects and restoration, are considered successful experiences in application (Jeong, 2016). Other studies have addressed the administrative reform by identifying the extent of cost/revenue analysis method on BOT projects, with application on one Egyptian airports by using the payback period, and net present value in the study of BOT projects (Khalifa, 2009).

Social obstacles:

BOT project typically incur a lot of social issues that could result in public opposition, overblown costs, and delays of the projects.

This category addresses societal areas that influence BOT adoption as: culture, ethics, ideology, traditions, norms, social entities, religious teachings, standard of living, social dynamics, social leadership, etc. Delhi et al (2012:236) found that trust and relationship building is a way to enhance project governability while the use of community-based norms creates social acceptance to BOT projects. On the other hand, good relationships among project participants provides harmonious working environment necessary for project success (Ekpah 2016:83), while lack of confidence in the capability and integrity of water operators leads to failure of water projects (Ameyaw 2017: 41). In the other hand, investors are concerned for their reputation since it reflects the style of public behavior

towards their firms. The public will express their views and concerns involving citizens in contract monitoring or in assisting the collection of user charges might lead to greater local participation and anticipation of governance issues (Delhi et al 2012: P 237). Furthermore, the community entities deal with BOT projects in accordance to the extent BOT projects address their concerns and interests. In Palestine social dynamics is strong enough to create a public front against certain projects due to social or religious reasons.

Studies on the social aspects: Some studies such as (sabir,2015,p94) have found that the main objective of partnership projects must lead to achieve sustainable development and the provision of social protection, which is the most important goals of fighting poverty and reduce it, and improve the level of education and health without wasting the rights of certain social groups, as emphasized on the importance of enhancing citizen participation and building confidence and social security for partnership projects.

Technical Obstacles:

Water and energy projects are projects with a complex frame of specifications related to their details. Requirements for achieving that may involve a lot of technical details and sophisticated technologies. A highly ranked specialists are therefore strictly required. Below is a brief list of some expected obstacles:

- ✓ Site location shall meet land use, environmental, town/rural planning regulations, law requirements and statutory restrictions (*Tenne, A 2010*).

- ✓ Site area extent and geometry shall be appropriate to accommodate all the facility's operation units, thus optimizing its layout and minimizing construction work costs; site's soil and geotechnical conditions shall be suitable for construction of the facility structures (*Nicos, 2008*).
- ✓ Easy access to the site (*Carrillo & et.al., 2008*).
- ✓ Site location shall enable easy and feasible access and interconnection to energy sources (power grid or independent power production), and to the water supply networks (*Tenne, A 2010*).
- ✓ The proximity to populated neighborhoods and environmentally protected and sensitive areas are also critical factors (*F. Lokiec, R. Meerovitch, 2013*).
- ✓ *Dallas, (2006)* classified technical obstacles into construction risks, Operating and Maintenance risks. Construction risks can be related to unknown ground conditions, delay in procuring of construction materials, and price escalation of raw materials for construction such as an increase in the price of steel, copper or aluminum are the problems related to construction risk which occur during construction phase (*Schaufelberger & Wipadapisut, 2003*). Operating & Maintenance risks can be summed as follows: when the performance of the project is below the required level due to technical problems. Such problems are related to an inefficient selection of equipment during the implementation phase and poor workmanship during the installation phase. New available technology should be incorporated to ease the operation phase. The operation and maintenance team requires

specialized technical skills and abilities in operating the facility(Zayed, & Chang, 2002).

Studies on the technical aspects: BOT contracts may be complicated due to its long-term contractual obligations and multiparty involvement, moreover legal, technical framework need to be developed on large scale for successful execution of the project (Mubin and Ghafar, 2007).Considering the large investments, the technical expertise, and the length of commitment that are involved, (Antonio and Miroslaw, 2007)mentioned that BOT projects present a unique opportunity for the transfer of technology to the developing countries.

To minimize the technical risks, the concessionaire is responsible to evaluate the risk in detail to ensure the project will be constructed accordance to the design specification and host government's requirements and functioning well (S. K. Bakri, S. A. Bokharey, K. Vallyutham, N. S. Potty and N. Abu Bakar,2010)

Concluding remarks:

Currently, there is an increasing focus on private sector involvement in infrastructure development through BOT approach. It brings about a redistribution of risks among the project stakeholders (Chan, D. W. M., Chan, A. P. C., and Lam, P. T. I. ,2006) It is obvious that BOT projects have positive advantages for both sectors. This makes them ready to encounter such initiative. Commercial profits are attractive to private sector, while public sector is attracted to this initiative because it solves its financial deficiencies. Despite the fact of this attraction, many issues make them reluctant or cautious to enter into such experience. Those issues may

be categorized to many types, as: administrative, political, social, technical, financial and legal obstacles. Such obstacles will hinder or even sabotage the adoption of BOT strategy. Then, a look to those constraints and risks is very significant, so as to take necessary measures. Many projects may not even exceed the feasibility analysis if constraints are beyond control or unbearable.

A tentative study to obstacles is one of the guarantees for the success of BOT adoption. This provides an understanding to those obstacles that will enable an efficient projection of the future which results into an efficient control over project affairs. That is symbolized in putting many scenarios and getting ready for each of them.

A look to the reviewed obstacles reveals that its impact is case sensitive as they differ from country to another. It is feasible to find out strategic solutions to those obstacles to make optimal use of them in the adoption of BOT model. Such solution should cover wide prospects ranging from the project study, to preparation of contracts, implementation, pricing, maintenance, to the moment the project is transferred to the government.

Obstacles might be related to BOT adoption stage. Some obstacles are more likely to appear in the preparation stage, others in feasibility study stage, others in the design stage, others in the construction stage, others in the operation stage while other appear in the transfer stage. However, some of those obstacles may appear in more than one stage. Another classification to those obstacles can be based on the source of those obstacles as governmental obstacles, obstacles related to investors and community obstacles.

Chapter Three

BOT Experiences

Chapter Three

BOT Experiences

Chapter three includes two sections, the first explores experiences in implementation of Build-Operate-Transfer projects, the second section - The Infrastructure in Palestine -water and energy sector:

BOT Experiences

Country experiences in the water sector: The Chinese government was not successful in its negotiating with foreign companies owing the lack of experience in this type of initiatives. As a result, it has developed its own concept in dealing with these projects. They have selected four medium projects in the field of energy, water, and transport appointed UNIDO as its consultant because of its extensive experience in this field, (Abu al-Enein, M.,2000, p. 10).

The opening of China to private participation in water infrastructure was certainly one of the most important changes during the decade. With 309 projects and \$8.2 billion in investments, China accounted for 58 percent of all private water projects by number and 23 percent by investment. In 2009, the last year for which data is available, China accounted for 80 percent of private water projects by number in low- and middle-income countries. Most of these projects were implemented under BOT agreements (*Perar* ,2012).

Latin America was the second most active region in terms of number of water PPPs: 113 projects involving investments of \$9.7 billion in 17

countries over the last decade. Two thirds of PPP activity concentrated in the first half of the decade. Most projects were located in Brazil, Colombia, Chile, and Mexico. Most projects were water supply concessions, followed by water and wastewater treatment plants BOTs (*Staff of the World Bank Group, 2014*).

The experience of the water network in Buenos Aires, Argentina, is one of the successful and exemplary experiences in BOT projects. Until 1993, the country suffered from water shortage and its high price. That was because the water network suffered many problems. BOT project turned the entire network to private sector for 30 years. The tender achieved his promise to reduce the price of water to 29%,. Furthermore, has also expanded the water network to reach 600 thousand new citizens, removed the deficit in providing water for citizens, and increased the proportion of drinking water to 26%. Only one year after of the project, the investor increased the revenues of the company from 216 million to US \$ 293 million, or 35%, in 1994. This was beneficial for both parties. The government has lessened the burden of expenditures and maintenance of the network. The citizen received the service at a lower price, and for the company increased revenues during the full fiscal year (*Attieh, 2001*).

Developing countries has expanded threefold during the last decade. With an average, there are 50 projects and 2 to 3 billion \$ investment commitments annually. 535 water projects benefitting from private participation have reached financial closure over the last ten years.

Commitments to water projects with private participation totaled about \$34 billion in that same period (*Perar, 2012*).

Europe and Central Asia were also active in implementing new water PPP projects during the last decade: 14 countries signed 44 projects involving \$3.1 billion in investment. Most of these were for water utilities (40) from them were implemented through management and BOT contracts, and four of them were implemented through divestiture (*Staff of the World Bank Group, 2014*).

An example of states experiences in the energy sector: The economic growth in the People's Republic of China (PRC) has resulted in more demand for basic infrastructure like roads, ports, and power generation facilities. To meet the development needs, the Chinese government has granted build-operate-transfer (BOT) concessions to attract foreign investment. Few states approved pilot projects and have been awarded implementation since late 1996, the first of which was the Laib in B power project in the Guangxi province, in this project the political and legal risks were mainly encountered by the local governments. The construction, operation, technical and financing risks were mainly borne by the sponsor with the Force Majeure. The major guarantees given for mitigating the Consortium's risks were: Exclusive concession granted, power purchase guarantee, and fuel supply guarantee. force majeure (including change in law) guaranteed, Foreign exchange guarantee, compensation under government's default and political risks, tax incentives, guarantee of lenders' right, Land and utilities and other support measures (S.Q. Wang, L.K. Tiong, 2000). The Chinese studied risks of their project. Those were:

political risks, construction completion risks, operating risks, market and revenue risks, finance risks, legal risks and competition risk.

Government of Iran suffered some problems such as: budget deficits, lack of technology, and the private sector previously monopolized by the state. To solve those problems, the government adopted (*Toulabi, 2013*).

BOT approach has a key role in rapid development of Iranian electric power industry to provide energy for massive demand in economic growth. South Isfahan power plant as a first BOT power plant; in contrast, some of them have been failed in the procurement process. Thus, the government sees there is a need for improving procurement approaches for future BOT projects. A study identifies and analyzed various success factors in BOT power plant projects in Iran. Table (4) show the BOT projects in Iran (*Yusof, and Salami, 2013*).

Table (4): A list of power projects via BOT approaches in Iran

Project Name	Type of Power	Method of Investment	Capacity (MW)	Project Investment Value (million €)	Concession Period
South Isfahan	Gas	BOT	954	320	20
Fars	Gas	BOT	972	550	20
Parehsar	Combined Cycle	BOT	968	550	20
South Isfahan	Steam	BOT	480	-----	20
Mianeh	Combined Cycle	BOT	1000	-----	20
Rafsanjan	Combined Cycle	BOT	1000	----	20

Source: *Aminah BintiYusof, Bahman Salami, 2013 pp-324-330*

Where they discussed the most influential factors of success in the electricity generation plant in Iran BOT projects(consultants, government

organization, and concessionaires). The result revealed the most important success factors in Iran BOT projects as: Appropriate project identification, Stable political situation, Favorable legislation regulation, Well-organized & committed public agency, Favorable project management, Attractive financial package, Reasonable risk allocation, Government support, Commitment & responsibility of public & private sectors, Competitive & transparent procurement process, Experience with BOT project by public sector (Yusof & Salami, 2013).

In Egypt, the first B.O.T project was implemented in mid-nineties by the Ministry of Electricity. There was an increasing demand for electricity mainly for industrial and urban use. They need to add new generation plants capacity of 9.3 million kilowatts by 2010 at an estimated cost of 2.7 Billion US Dollars with a situation the Egyptian Electricity Authority was debt was 14.2 Billion ILE. BOT project established southern part of the North-West Gulf of Suez capacity of 2×240 MW, The Council of Ministers issued Decree No. 4 of 1998 concerning the power station of Sidi Kerir Al-Bukhariyah (Sharaf El-Din. A., 2001).

Water and Energy Infrastructure in Palestine

Definition of infrastructure

Infrastructure is defined as everything related to facilities; structures, systems, relationships and skills that help organizations and enterprises achieve their objectives. Infrastructure is viewed as a coherent set of structural elements that provide a structural support framework to perform certain functions. It represents the backbone for achieving citizens' needs.

Without it cannot achieve any development or cultural well-being in society. (*INTOSAI Environmental Review Working Group, 2013*) classified into two categories:

- Economic or physical: includes services of various facilities, such as water, sewage, etc.
- Social: It includes the construction of educational facilities, hospitals, security services, civil defense, entertainment, and others. There are those who define it as the physical infrastructure of the state or the population, including roads, water facilities, sewerage, etc.

The construction of a physical infrastructure should be suitable for the services to be provided. It is unreasonable to build a hospital with a fault in the water and sanitation networks, and this does not eliminate the role of social infrastructure which is complementary to physical.

The World Bank's highlighted the importance of continuing to develop the infrastructure as summarized below (*Abu Jouda, 2011*):

- The availability of infrastructure helps to increase Gross Domestic Production.
- The expansion of the infrastructure services network leads to the growth of the national economy and increasing financial efficiency.
- Infrastructure has long-term effects on the type of social structure to be developed, particularly, the growth of urban centers and other associated areas.

- Insufficient maintenance of infrastructure can lead to increased production costs and could result in economic activities collapsing.

This trend points the attention to improve the infrastructure in Palestine. The identification of the main constraints and obstacles facing the implementation of BOT projects are essential for improving infrastructure in Palestine. Still Palestine suffers from a lack of most the services and other necessary resources needed to achieve sustainable development because of the Israeli occupation which controls all its resources (*Agha, W. H & Abu-jameh, 2010*). Partnership with the private sector may help the public sector to contribute positively to sustainable economic and social development.

There are several ways in which the private sector can contribute to finance and manage infrastructure projects such as BOT projects (*Mas, 2005*). Many political, social, economic and financial motives work in favor of adoption of BOT projects in Palestine. Those can be summarized as follows:

1. There is an increasing need for economic: where the grants provided by the public sector are very limited. The involvement of the private sector in the Palestinian economy as a financier can improve economic growth through increasing investments (*Report Office of the United Nations Special Coordinator, 2000*).
2. There is a need to improve the financial status of the government since it suffers a dire budget deficit (*Beydoun, 2001*).

3. There is a need for increasing the operational capacity of the productive sectors in the Palestinian economy. The inability to provide ten thousands of job opportunities required to treat the problem of unemployment and poverty (*Natur, 2000*)
4. There is a need for reducing the Palestinian balance of payments deficit. Foreign trade data indicates an accelerated increase in trade balance deficit due to import growth with rates much higher than the rates of growth in exports (*The third Annual Report of the Palestinian Monetary Authority, 1997*)
5. There is an excessive need to boost public sector efficiency. Stressing its role in alleviating obstacles to the development process and creating an appropriate investment climate and stimulating local and foreign investments
6. Taking into account the international political and economic changes and the general trend: led by the Bank, and the International Fund so that the Palestinian economy can engage in global economies (*Gerenzia, 2000*)
7. Palestine needs to create new job as a solution to the problems unemployment and labor market.
8. World Bank experts believe that one of the important incentives for the BOT projects is that it is an indicator of the government's commitment to economic reform (*Aladdin, 2002*).

9. BOT projects are usually associated with the development of the local capital market. An aim that can be achieved via successful BOT projects (*Al Yousuf, 2001*)

Such needs emphasize the importance of partnership between the public and private sectors in the field of infrastructure development.

The majority of researches on the Palestinian economy agree to the fact that the Israeli occupation led to the destruction of the Palestinian infrastructure and made it unfit to embrace any economic development (*Moody, 1997*). The Israeli investment on infrastructure in Palestine was made with an aim to serve the settlements.

The Palestinian Authority since its inception in 1994, started Investments in infrastructure with the help from donors. PECDAR was established to manage such initiative. Annual investments have increased more than four doubles since they were before the establishment of the Palestinian Authority. These investments were still insufficient to achieve the Palestinian infrastructural needs. The estimated investments in infrastructure are 140-175 million dollars a year to compensate its destruction by occupation and to make it reach to the average of developing countries. (*Abu Al-Qomsan, Kh. ,2005*). Despite all these achievements in the presence of the Palestinian Authority, investment in infrastructure in Palestine continued to be distorted and faced with difficulties as a result of the limited possibilities of the Authority. Add to this the failure to take adequate measures to treat distortions in the investment infrastructure (*odeh, 2008*), that is in addition to the continuing

Israeli destruction of the Palestinian infrastructure. The impact was huge, especially, after the Al-Aqsa Intifada in 2000 as punitive policies and measures aimed primarily at destroying all the elements of steadfastness and rebuilding the state. This is seen in the destruction of the headquarters, institutions, factories, roadblocks and the destruction of Gaza's airport and seaport. (*Nasr, 1997*). This has increased instability resulted from decline in investments revenues, and decline or even stopped work in infrastructure projects (*Abdel Razek and Makhoul 2001*).

There is also a lack of an updated, unified and standard information base. The pressure on the current infrastructure has led to an increase in environmental deterioration (*Mekdad, 2009*), poor services and growth level, taking into account the occupation policies and bilateral agreements between the two sides infrastructure that negatively affect investments in infrastructure.

Financing infrastructure projects is usually paid for by the government. The sources for such financing comes from: taxes, public bonds, grants, fees for use of the service, income from private sector franchises, special programs and financial arrangements, borrowing from banks, the participation of the private sector (*Natur, 2000*).

The participation of the private sector in the financing, existed before if we refer to historical events. The British occupation to Palestine granted many concessions to companies and persons to manage public facilities or to exploit natural resources. During Hashemite Kingdom rule of the West Bank, the kingdom adopted concession contracts for the management of

public utilities. When the Palestinian National Authority has come, it gave concession contracts in Palestine, but there is no legal framework to regulate such concessions. In 2005, an attempt was made to bridge the legislative gap, and to regulate the process in Palestine. The Basic Law, Article 94 amended, it states that “the law shall determine the rules and procedures for granting concessions or obligations relating to the exploitation of natural resources and public utilities “(*Palestinian Law, 2003, Article 94*). The concession law has also been drafted, but not approved yet.

Since this study focused on the energy and water supply, below is a brief review of those sectors. The Palestinian National Authority (PNA) establishing the Palestinian Energy Authority No. 12 of 1995. Article 3. (*Palestinian Al Waqaia'*, No. 7, 25 October 1995, p. 10). With regard to water, the Palestinian Water Authority was established by Law No. (2) of 1996 and Water Law No. 3 of 2002. No mention was given to concession contracts.

Public-private sectors partnership, BOT projects in Palestine, was carried out to construct Al-Bireh commercial center at a cost of 10 million dollars, which was completed in 2000. The contract was between Ramallah and Al-Bireh Municipality and Palestine Real Estate Investment Company. Another project carried out by adopting the BOT strategy, was the construction of the commercial center of Bethlehem, where it was agreed between the Bethlehem Municipality and Palestine Real Estate Investment.

The total cost was 12 million US dollars and was completed in 2000 (*Palestine Real Estate Investment Company*)

However, despite the Palestinian need to invest in infrastructure using the BOT projects, these projects have not been used in the infrastructure.

Palestinian Water Authority

Since its inception in 1994, the Palestinian National Authority paid special attention to the improvement of the water networks. It carried out several important projects to provide water for the Palestinian citizens. The quantity of water consumed per month by the economic sectors was 1,146.5 thousand cubic meters (*odeh, 2008*), which was very low compared to standards and people needs. An attempt was made to improve the situation, but was not possible to achieve due to the Israeli occupation policies and practices. On the other hand, the financial and technical deficiencies imposed more burdens on the Palestinian side. In short, providing services to the Palestinian public is hindered by the unfair Israeli destructive policies.

The Palestinian Water Authority has assumed responsibility for the construction and development of water sector institutions. In addition to building, rehabilitating the destroyed infrastructure through projects funded by donor countries and providing water and sanitation services to the Palestinian citizen during the decades of occupation. The willful neglect of the development in water sector in Palestine by the Israeli occupation over decades has directly contributed to the reduction of real development

opportunities. Despite the Peace process and the establishment of the Palestinian National Authority in 1994, the development of the water sector remained restricted and controlled by Israel. The Israeli occupation has imposed restrictions and obstacles to the development of water sector, as an effort to hinder the strategic dimension for sustainable development. Even technical requirements were not allowed to reach the Palestinian side. Despite all obstacles imposed by the occupation authorities, Water Authority struggled to harness and obstruct all efforts and financial resources to develop this sector, and tried to increase the Palestinian share of water consumption, (*PCBS, Palestinian Central Bureau of Statistics report, 2016*) reported that the Palestinian per capita share of drinking water about 70 liters per day, compared with 500 liters for Israeli citizens. This increased the gap between the two to nine times in water used for irrigation and agriculture. Israel now controls about 90% of Palestinian water resources. They enjoy it and its settlements, 48.8% of the households in Palestine believe that the water used for drinking is good, pointing out that this percentage varies greatly in the Palestinian Territory, 73.5% in the West Bank and 5.8% in the Gaza Strip.

Enhancing the role of the private sector and giving greater responsibilities to it may contribute better to the development of water services if clear policies and strategies are developed. (*Strategic Plan for Water Authority 2016-2018*) highlighted the possible interventions for enhancing this role, as:

- Facilitate and encourage the participation of the private sector.

- Develop the required policies and strategies for engaging the private sector.
- Develop systems governing partnership with the private sector.

Through follow up the mechanisms of the Water Authority, the strategies and objectives which it seeks to achieve from the development of institutional capacities, building effective cadres, work to protect water resources and strengthen local and regional cooperation, there remains a great opportunity to achieve sustainable development in the water sector through partnership with the private sector using BOT projects. Particularly, one of its priorities published on its website is to explore ways of partnership with the private sector, which encourages investment in it in the development of water sector.

Palestinian Energy and Natural Resources Authority

In energy sector, an electricity generating station with a megawatt capacity was established in the Gaza Strip in 2008. The European Investment Bank (EIB), Italy and the World Bank financed the \$82.6 million electricity sector management and investment project covering the central and southern West Bank. The Israeli policies made the Palestinians fully dependent on the Israelis in this sector. Most of the electricity in the West Bank is supplied by the Israeli side. Israel also provides the Palestinian areas directly (from the Israeli company directly to the citizen as in the Gaza Strip) with 35% of the electricity, while the rest is through local companies that buy electricity from the Israeli side and sells it to Palestinian citizenship (as in the Jerusalem Electricity Company in the

West Bank). while some in rural and remote area's supply electricity through private generators (*odeh, 2008*).

The Authority is responsible for generating power on a sound basis in a way that meets the needs of consumers. Generating energy to be exported to the neighboring countries, importing energy and establishing the necessary transport networks, establishing national networks that provide energy transmission throughout the country and establishing sub-networks to distribute energy to the consumer and to coordinate the connection between these networks and the distribution networks of the entrepreneurs. In addition to regulating the generation, storage, distribution and manufacture of equipment, transport and consumption of energy and the development of specifications for energy. The Authority undertakes research and development in the use of all types of renewable energy as solar and wind energy, to grant the necessary licenses for the generation under a concession or license (*law Establishment of Power Authority No. 12 of 1995, Article 3*).

It is necessary to review the work of the generation department and what is related to the policies and generation sector and the electrical power as well as the plans necessary to implement them. As the generation sector in Palestine is a private sector, the work of this department is important with respect to monitoring the performance of these companies technically such as participation in the development of policies related to the generation of electric energy. In addition to determining the future expectations of loads and setting plans to secure the required energy. Studies were conducted on the methods of economic feasibility and suitability of generating electric

power from various sources. The specifications of the World Bank Law No. (12) Of 1995, Article 21 were taken into account.

The Authority has adopted external support to achieve the mission and objectives of the Energy and Natural Resources Authority to organize its work in the current circumstances. This involves coping with the national requirements and priorities, and also the inability of the National Authority to provide financial coverage for this sector.

Minister Thafer Al-Mulhem said in an interview on February 7, 2018 that ‘‘the investor is looking for a safe environment and a suitable investment’’.

The General Electricity Law was issued on 5th of 2009. All the legal legislations that are related to protecting the investor and the government have been issued. The Energy Authority is able to provide an encouraging investment environment in addition to providing adequate guarantees to protect the rights of the investor.

BOT projects are more attractive to the government than to the private sector; because such projects are the best among the other contracts, where they can be applied to power plants and hence the investment is very promising. Moreover, availability of legal environment in the Energy authority will be an encouraging investment.

In an interview with Fuad Rammal (*Administrative Director at PWA, 28/5/2017*) Where he spoke from the point of view of the Energy Authority, there is a possibility to study partnership projects with the private sector in the field of electric power generation and to direct the BOT projects specifically, to the benefits that the study produced earlier.

Chapter Four

Methodology

Chapter four

Methodology

4.1 Overview

According to Bajpai, N. (2011) Business research methods can be defined as “a systematic and scientific procedure of data collection, compilation, analysis, interpretation, and implication pertaining to any business problem”.

Types of research methods can be classified into several categories according to the nature and purpose of the study and other attributes. In methodology chapter of your dissertation, you are expected to specify and discuss the type of your research according to the following classifications.

Types of research methods can be broadly divided into two quantitative and qualitative categories: Quantitative research “describes, infers, and resolves problems using numbers. Emphasis is placed on the collection of numerical data, the summary of those data and the drawing of inferences from the data” Herbst, F. & Coldwell, D. (2004).

Qualitative research, on the other hand, is based on words, feelings, emotions, sounds and other non-numerical and unquantifiable elements. It has been noted that “information is considered qualitative in nature if it cannot be analyzed by means of mathematical techniques. This characteristic may also mean that an incident does not take place often

enough to allow reliable data to be collected”. Herbst, F. & Coldwell, D. (2004).

Types of the research methods according to the nature of research can be divided into two groups: descriptive and analytical. Descriptive research usually involves surveys and studies that aim to identify the facts. In other words, descriptive research mainly deals with the “description of the state of affairs as it is at present”. Kumar, R. (2008) , and there is no control over variables in descriptive research.

Analytical research, on the other hand, is fundamentally different in a way that “the researcher has to use facts or information already available and analyze these in order to make a critical evaluation of the material”. Kumar, R. (2008).

4.2 Research Design

4.2.1 Overview

This chapter addressed the procedures and methods used by the researcher to determine the population and the sample of the study, as well as the practical procedures used to build and describe the study tools. It also illustrated the types of statistical tests used in this study. Furthermore; it included a description of the reliability and validity of the study tools.

4.2.2 Research Methodology

The researcher used qualitative and quantitative approaches to reach statistical analysis, the quantitative consisted of a questionnaire, the

qualitative consisted of semi-structured interviews with Decision-makers in the Energy and Water Authority and businessmen.

This chapter presents analysis of data obtained from interviews using thematic analysis approach.

To achieve the research objectives of identifying the major obstacles to applying a model build-operate-transfer BOT in Palestinian infrastructure from the perspective of official working in (water and energy authorities) and (A)classified businessmen, the researcher in this chapter deals with a description of the research methodology and its community as it gives a detailed description of the search tool, sincerity and consistency as well as search procedures and the statistical method which used for statistical data processing.

4.3 Population, Sampling Methods and Sample Size

4.3.1 Research Population:

The government officers of water and energy departments and businessmen category A, (only this category which is eligible to compete for huge infrastructure projects) are those who are having direct concern, knowledge and experience pertaining the adoption of BOT strategy in water and energy projects.

The targeted Government officers were 208 employees, while businessmen counted 460 businessmen. The total population of the study is 668. The research targeted to cover as much possible portion of the population. The government officials sample was identified to by sending the questionnaire

to all except those who are in leave and those who did not express their willingness to cooperate. The category of businessmen who are classified A in the West Bank was obtained, it contained 460 persons.

The businessmen sample was chosen to be 50% of this total study population on the bases of single numbers appearing in the list, this sample was 230 businessmen. The total of the sample was 430 businessmen.

4.3.2 Sample Size

The sample of the study consisted of (200) employees of the Water and Power Authorities and (230) businessmen classified as (A) grade.

tables (40-47) in Appendix (5) show the distribution of the research community depending on their independent variables.

4.4 Study Approach:

The descriptive approach is suitable as it is based on the description and determination of the facts relating to the current situation, describing it as an explanatory description in terms of facts and data available from the considered community, where the researcher conducted a comprehensive survey to check the views of the research community, who they are working in water and energy authorities in the West Bank and classified businessmen (A) to identify the main drawbacks facing the sample application of the build- operate – transfer (BOT) model in the Palestinian infrastructure by applying to the water and energy authorities.

4.4.1 Study Tool:

To develop a comprehensive questionnaire thoroughly, the literature review was conducted referring to relevant books journals and tens of previous studies. In addition to the researchers conducted preliminary interviews with many experts, academics and businessmen. This helped in finalizing the study questions objectives and the related sources of data (respondents). This resulted in identifying 55 items of the obstacles facing BOT projects in water and energy sectors in Palestine, which formed the basis for the formulation of a preliminary questionnaire. For validation and reliability, it was sent for five academic specialists and 5 businessmen. Based on their comments, few modifications were done; some items were deleted, others combined, reworded, or/and added. A clear, comprehensive and validated final copy of the questionnaire was obtained. It consisted of an opening letter directed to respondents introducing the study and BOT concept and asking respondents to cooperate for achieving the study objectives, the second part included biographical details of the respondents, and the third part which is the core of study tool, included 55 items grouped into six major obstacles categories namely: legal category included 11 items , Administrative category included 15 items, financial category included 11 items , social category included 5 items , political category included 7 items, and technical category included 6 items. Respondents were directed to rank those obstacles by clicking a level of influence (very high, high, moderate, weak, and very weak).

The questionnaire was distributed personally by the researchers to the targeted sample. Respondents were made to understand that their responses should not be biased and should consider the national interests as a priority. Table (5) Show details of the population, sample & questionnaire management.

Table (5): Population, sample & questionnaire management.

	Population %	targeted sample %	Missing %	Returned %	Returned but Invalid %	Valid for analysis %
Businessmen	460 (100%)	230 (50%)	25 (10.9%)	205 (89.1%)	10 (4.9%)	195(95.14%)
Govt. officials	208 (100%)	200 (96.2%)	7 (3.4%)	193 (96.5%)	12 (6.2%)	181 (93.8%)
Total	668 (100%)	430 (64.4%)	32 (7.4%)	398 (92.6%)	22 (5.5%)	376 (94.5%)

In table (5) the valid number of the collected questionnaires formed 56.3% of the study population.

4.4.2 Tool validation:

It verified the authenticity of the measurement through a presentation to a group of adjudicators with competence and experience as indicated in the appendix ,(1) where they made a number of observations about the validity of each Item of the questionnaire in terms of language safety and suitability for the target group and the link of the obstacles to the dimensions to be measured. Notes are taken into account when the questionnaire is issued in its final form.

4.4.3 Tool reliability

To verify the immutability of the tool, use the Kronbach alpha formula to extract the stability. The following table shows the immutability of each dimension of the tool.

Table (6) shows the results of the stability equation Cronbach's-Alpha for the measure of application obstacles of the BOT model in the Palestinian infrastructure from the point of view of employees in the Water and Energy Authorities and (A)classified businessmen.

	Fields		
Num	Field name	Num of obstacles	Alpha value
1	legal obstacles	11	.898
2	administrative obstacles	15	.793
3	financial obstacles	11	.680
4	Political obstacles	7	.661
5	Social obstacles	5	.575
6	Technical Obstacles	6	.782
7	Total obstacles	55	.900

The data presented in Table (6) indicated that the research tool prepared for drawbacks subjects of the BOT model in the Palestinian infrastructure from the perspective of the employees of the (Water and Energy Authorities) and the classified businessmen (A) has a stability that confirms the possibility of using the tool in the research. Thus, the researcher considered these indications sufficient to use the tool in the current research.

4.4.4 The procedures

The research is developed based on the descriptive methodology, which is adopted in accordance to the following steps:

The First step: is a seminal literature review conducted to point out the study objectives and identify the obstacles that may hinder BOT strategy adoption mainly in water and energy sectors. In doing that, the focus was on the developing countries. Preliminary interviews with some stakeholders were also carried out. Based on this, a set of major obstacles that may face BOT strategy adoption in water and energy sectors in Palestine were developed. They were 55 items grouped into six categories which formed the core of the data collection tool “the questionnaire”. To make them measurable, each obstacle was associated with a five levels (Likert scale) of possible influence, the respondents are asked to tick one for each.

The Second step: the identification of data sources; the concerned parties (government officials and businessmen).

The Third step: data collection, this implies introducing the topic and data collection tool and responding to their queries. Afterwards, an exploratory data analysis is conducted via SPSS v.22. Statistical results appearing in relevant tables and figures formed the core focus for conclusions and recommendations.

4.4.5 Data analysis

The focus in this stage was on transforming the responses of research sample into an integral and aggregated unit. SPSS V.22 was used to

achieve this task. After coding the questionnaire items, responses were dropped in the system. Results of the descriptive analysis were expressed in the following forms: measures of central tendency(means), and measures of dispersion (standard deviation), correlation measures (one-way ANOVA, t. Test), that is in addition to counts, percentages, etc. To examine questionnaire reliability, Caronbakh Alpha test was used. After the statistical figures were out in tables, those were analyzed theoretically by utilizing the knowledge acquired in the literature review stage.

Chapter Five

Data Analysis and discussion

Chapter Five

Data Analysis

5.1 overview

This chapter includes a comprehensive and detailed presentation of the research results so as to answer the research questions. Six categories obstacles for adopting BOT strategy in the water and electricity sectors in Palestine were identified. Those obstacles: administrative, financial, political, technical and social obstacles. Those categories formed the core content of the tool of data collection (the questionnaire). The sample respondents of the study were asked to rate the level of influence of each obstacles. After being treated using SPSS, the views of the respondents on all obstacles categories and their details represented the answers for the study questions, these questions were:

- Major question: What are the major obstacles for the adoption of BOT strategy in water and energy sectors in Palestine?

Minor questions:

- What are the levels of influence of the legal obstacles for the adoption of BOT strategy in water and energy sectors in Palestine?
- What are the levels of influence of the administrative obstacles for the adoption of BOT strategy in water and energy sectors in Palestine?
- What are the levels of influence of the financial obstacles for the adoption of BOT strategy in water and energy sectors in Palestine?

- What are the levels of influence of the political obstacles for the adoption of BOT strategy in water and energy sectors in Palestine?
- What are the levels of influence of the social obstacles for the adoption of BOT strategy in water and energy sectors in Palestine?
- What are the levels of influence of the technical obstacles for the adoption of BOT strategy in water and energy sectors in Palestine?

Here are the five levels of Likert scale, 1 means least influence up to 5 which means a very high influence, the arithmetic means came out of SPSS analysis and these indications are in table: (7)

Table (7): the description of the arithmetical means

Arithmetic mean	Level of obstacles influence
Less than 1.8	very low
From 1.8 to less than 2.6	Low
From 2.6 to less than 3.4	Medium
From 3.4 to less than 4.2	High
From 4.2 to 5	Very high

Answering of the major question of the study: What are the obstacles that may hinder the adoption of BOT strategy in water and energy sectors in Palestine?

The answer to this question that represents the sample opinion on the level of influence of the 55 items categorized obstacles in six groups. Results are given in form of arithmetic means and standard deviations of categorized sample responses (government officials and businessmen). Results related to this question were as given in figure (3):

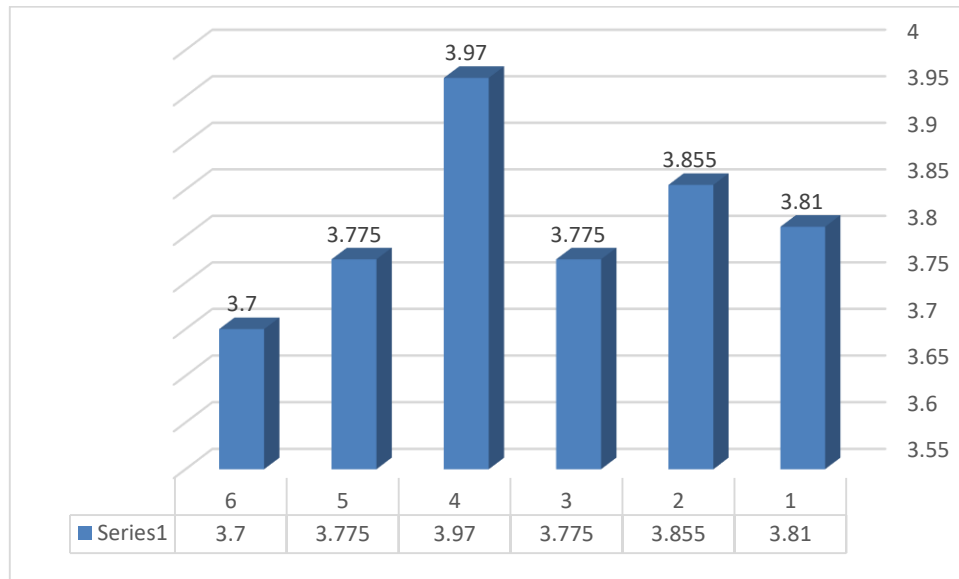


Figure 3: Means of level of influence of all categories of obstacles. (look to table num 48 in appendix)

Figure3 shows that the level of influence of all the six categories of obstacles was high with an average 3.815. The arithmetical means vary from being 3.70 up to 3.97 and high level of influence to all the categories. The political obstacles scored the highest among all dimensions with a mean 3.97, while the technical obstacles scored the lowest with mean 3.70. Such results reveal a natural view since occupation is the real obstacle for the Palestinian society as appearing in the results of all types of scientific research of a national nature. At most, all strategic issues of Palestine and the infrastructures are under the control of Israeli military occupation, mainly water and energy sectors.

A look to Figure (3): reveals that Arithmetical means of responses of sample members (government officials and businessmen) were very close to each other. Means of results to Political and technical obstacles are identical to show that there is a high level of agreement between the two

parties. This appears that both parties agree with each other on the same issue which is: the influence of all categories of obstacles is high. They also agree that Political obstacles are the highest among all categories.

This image of the overall results does not provide the necessary understanding of the obstacles facing the adoption of BOT strategy in water and energy sectors in Palestine. This can be achieved via looking into the details of each and every category of those obstacles. This is reflected in answering the minor questions of the study which focuses on: what are the levels of legal obstacle that may hinder the adoption of BOT strategy in water and energy sectors in Palestine? What are the levels of administrative obstacle that may hinder the adoption of BOT strategy in water and energy sectors in Palestine? What are the levels of financial obstacles that may hinder the adoption of BOT strategy in water and energy sectors in Palestine? What are the levels of political obstacle that may hinder the adoption of BOT strategy in water and energy sectors in Palestine? What are the levels of technical obstacle that may hinder the adoption of BOT strategy in water and energy sectors in Palestine? What are the level of social obstacle that may hinder the adoption of BOT strategy in water and energy sectors in Palestine? Answers to those questions symbolizes the results as given in tables A1 to A18 Blow.

5.2 Results related to the minor questions:

The detailed results of the minor questions are given below within the following arrangements:

- first is the table that describes the unified results for each and every category, that is followed by
- The table describes the responses of the government officials, preceded by
- The table for the responses of the businessmen. (results are given in 3 tables due to space limitations). Those tables are followed by
- A summary for each category.
- Results in all tables are given in Descending order, which means that the highest obstacles (highest mean) will appear first and the last scored the least influence.

Below is an independent description for each category starting with legal obstacles.

5.2.1 Legal obstacle:

Minor question: What is the level of influence of the legal obstacle on the adoption of BOT strategy in water and energy sectors in Palestine?

Legal obstacles that may hinder a smooth adoption of BOT strategy in water and energy sectors in Palestine counted eleven items. The study tool of data collection “the questionnaire” asked the sample members to rate the level of influence of those obstacles. Answers were treated and analyzed through SPSS. As stated in the questionnaire, the rating is given in form of Likert scale 1 (least influence) to 5 (highest influence). After tabulation and analysis, results are as given in Figure (4) which represents overall sample

responses, table (8) represents the responses of the government officials, and table (9) represents the Attitudes of the businessmen.

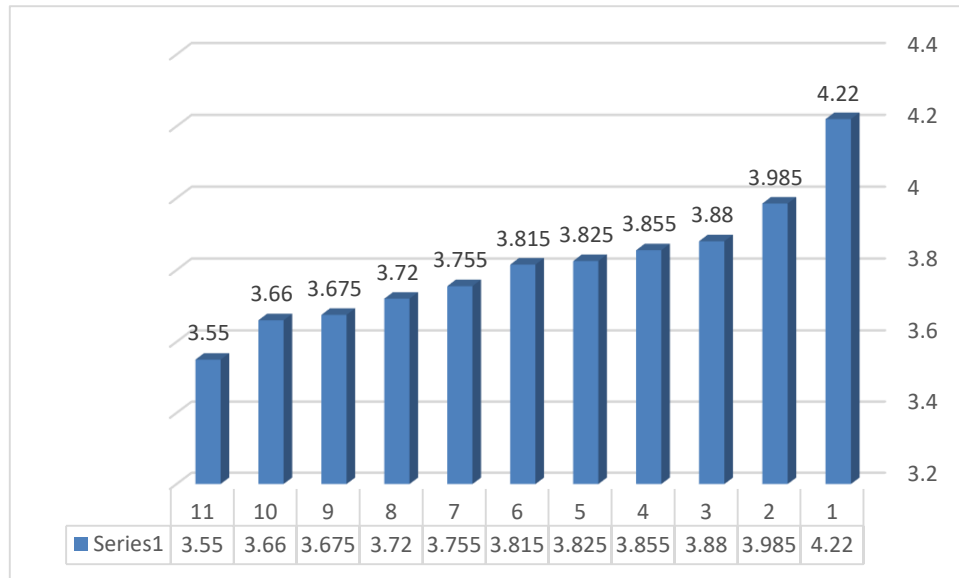


Figure (4): Overall means and standard deviations of legal obstacles. (look to table num 49 in appendix)

Table (8): Means and standard deviations of government officials responses on legal obstacles.

items	mean	Std. deviation	Level
Absence of the role of the Legislative Council in passing laws for BOT adoption	4.27	.79	Very High
Absence or weakness of the regulations and principles that govern implementation of BOT project.	4.00	.94	High
Existing legislation does not provide a fair opportunity to encourage investment in accordance with the BOT strategy	3.86	1.02	High
Lack of systems to operate BOT projects.	3.82	.99	High
Absence or weakness of laws governing the partnership in Palestine	3.80	1.11	High
Weak frames of reference to resolve disputes that may arise between the government and contractors	3.80	1.00	High
Weak mechanisms for the selection of the most suitable bidders	3.75	1.02	High
Misty items of the contract between the government and investors	3.68	1.06	High
Some legislations are repellent for investment in infrastructure projects	3.64	1.03	High
Cloudiness of authorities, obligations and rights of both parties	3.63	.93	High
Misty contracting between the government and investors	3.48	.94	High
Average	3.79	.69	High

Table (9): Means and standard deviations of businessmen responses on legal obstacles.

items	mean	Std. deviation	Level
Absence of the role of the Legislative Council in passing laws for BOT adoption	4.17	.81	High
Absence or weakness of the regulations and principles that govern implementation of BOT project.	3.97	.88	High
Existing legislation does not provide a fair opportunity to encourage investment in accordance with the BOT strategy	3.90	.88	High
Lack of systems to operate BOT projects.	3.89	.90	High
Absence or weakness of laws governing the partnership in Palestine	3.85	.99	High
Weak frames of reference to resolve disputes that may arise between the government and contractors	3.83	.94	High
Misty items of the contract between the government and investors	3.76	.94	High
Weak mechanisms for the selection of the most suitable bidders	3.76	.95	High
Cloudiness of authorities, obligations and rights of both parties	3.72	.93	High
Some legislations are repellent for investment in infrastructure projects	3.68	.99	High
Misty contracting between the government and investors	3.62	.93	High
Average	3.83	.65	High

Figure (4) reveals that the average mean of this category of obstacles is 3.81, This donates that the influence of those obstacles is high. Rating of ten items out of eleven scored High-level of Attitudes, while one obstacles only scored very high, it is the: Absence of the role of the Legislative Council in passing laws for BOT adoption. The next obstacle was: the absence or lack of the regulations and principles that govern implementation. The least influential among the legal obstacles is: Misty items of the contract between the government and investors, but remaining with high level of influence.

Table (8), represents the responses of the government officials, reveals that the average mean of influence of the legal obstacles is 3.79. The level of influence is high. Absence of the role of the Legislative Council in passing laws for BOT strategy adoption, with a mean 4.27 with a very high level of influence topped the list of legal obstacles. The ten remaining obstacles scored high level of influence. The least influential among the legal obstacles from the government official view point is: Misty contracting between the government and investors, mean 3.48, with a high level of influence.

Table (9), represents the responses of the businessmen. Results appearing in this table reveal that: the average mean of this obstacle is 3.83, which is a high level of influence. In view of the businessmen, the “Absence of the role of the Legislative Council in passing laws for BOT strategy adoption”, the highest, a very high level of influence among the legal obstacles with mean 4.17. Other obstacles rated high influence. The lowest among them was: Misty contracting between the government and investors mean 3.62, holding a high level of influence.

"We are in need of creative solutions on the legal and administrative level to suit the Palestinian situation; because its people suffer occupation, particularly, more than 94% of the investments are in private sector," his Excellency, the businessman Sameeh Tbelah said in an interview on February 7, 2018. In other words, the Palestinian economy is built on the private sector. There is a good chance for the success of BOT projects by referring to the work of a consortium with businessmen, banks and government, in need for a cultural renaissance, development of laws and increasing public confidence in the private sector.

Comparisons between the responses of government officials and businessmen reveal that their rating to the legal obstacles shows the same. They agree that the "Absence of the role of the Legislative Council in passing laws for BOT strategy adoption", is a huge legal obstacle. Literature review reveals the destructive impact of such absence. (Chen,2010) It means that putting this issues as apriority will help in a smooth adoption of BOT. Other obstacle rated a high level of influence. It is also observed that the mean responses of the businessmen 3.83 appear higher as it is of the government official mean which is 3.79. The reason for the rising trends in the private sector is due to their recognition of importance of a legal framework that represents a guarantee for the BOTprojects, and This agreed with Literature (Eventia, R.C.,2017, p531), Which indicated that a legal framework protects against the risks of BOT, delays, costs and emergencies by providing legal procedures that protect the rights of both the public and private sectors.

5.2.2 Administrative obstacles:

Minor question: What is the level of influence of the administrative obstacles on the adoption of BOT strategy in water and energy sectors in Palestine?

Administrative obstacles that may hinder the adoption of BOT strategy in water and energy sectors in Palestine counted fifteen items. The study tool of data collection “the questionnaire” asked the study sample to answer the question by rating the level of influence of those items. Answers were tabulated and analyzed using SPSS. Results are as given in Figure (5) representing the opinion of the sample as a unit, table (10) represents the opinion of the government officials and table (11) represents the opinion of the businessmen.

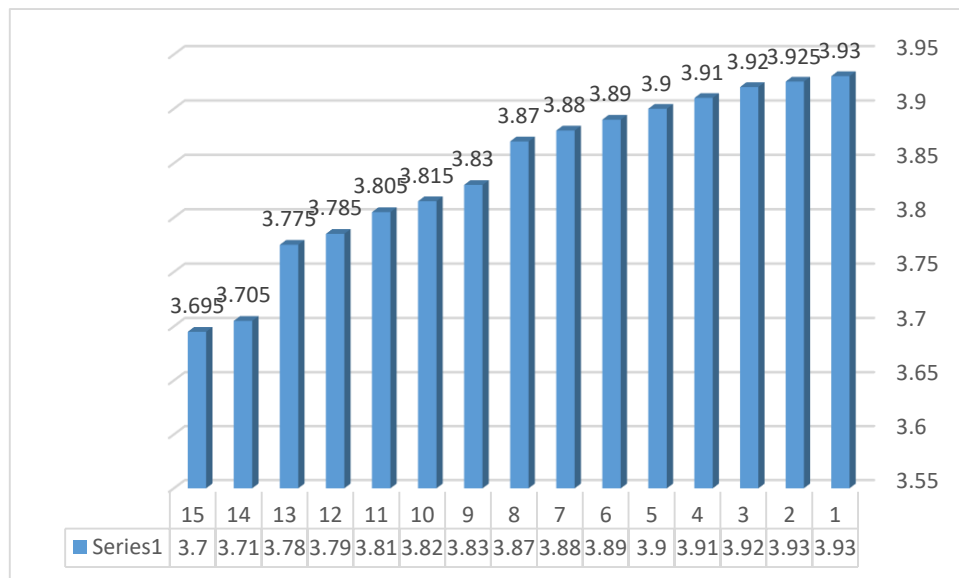


Figure (5): The administrative obstacles arithmetical means of the study sample responses. (look to table num 50 in appendix)

Table (10): The administrative obstacles arithmetical means of government officials

items	mean	Std. deviation	Level
Poor coordination mechanisms between the government and investor	4.11	.82	High
The government claims the right to decide solely.	4.09	.69	High
undetermined time frame for transferring ownership of BOT projects to the government	4.04	.85	High
The difficulty of predicting the challenges entailed in BOT contracts	4.02	.80	High
lack or absence of awareness of partnership procedures	3.98	.90	High
Government lacking vision for BOT projects	3.91	.93	High
The absence or weakness of the mutual strategic vision	3.85	.74	High
Misty of BOT projects ownership transfer procedures	3.85	.85	High
Many stakeholders are involved in BOT strategy adoption(municipalities, ministries, etc.)	3.80	.96	High
Weak plans for applyingthe partnership	3.77	.91	High
The limited number of investors who are able to implement BOT projects	3.76	.85	High
Negotiations on BOT projects consumes a lot of time	3.75	.91	High
Investor claim the right to decide solely	3.71	.92	High
Lack or weakness of time frame flexibility	3.70	.92	High
The complexity of government procedures and regulations	3.62	.97	High
Average	3.86	.52	High

Table (11): arithmetic means and percentages for the first field of classified businessmen (A)

items	mean	Std. deviation	Level
Weak plans for implementing the partnership	3.99	.80	High
unclear of BOT projects ownership transfer procedures	3.97	.85	High
Government lacking vision for BOT projects	3.93	.79	High
The government claim the right to decide solely.	3.92	.84	High
The limited number of investors who are able to implement BOT projects	3.90	.86	High
The absence or weakness of the mutual strategic vision	3.89	1.01	High
lack or absence of awareness of partnership procedures	3.87	.76	High
Negotiations on BOT projects consumes a lot of time	3.86	.86	High
Investor claim the right to decide solely	3.86	.82	High
The complexity of government procedures and regulations	3.79	.91	High
Misty time limitations for transferring ownership of BOT projects to the government	3.76	3.07	High
The difficulty of predicting the challenges entailed in BOT contracts	3.76	.90	High
Poor coordination mechanisms between the government and investor	3.75	.88	High
Many stakeholders are involved in BOT strategy adoption(municipalities, ministries, etc.)	3.75	.93	High
Lack or weakness of time frame flexibility	3.69	.91	High
Average	3.76	.49	High

Figure(5) reveals that the average mean of the administrative category of obstacles is 3.81. This denotes that, the level of influence of those obstacles is rating of all administrative obstacles items (fifteen) scored high level of influence. The highest item among them were: “Poor coordination mechanisms between the government and investor ” with a mean 3.93 , “lack or absence of awareness of partnership procedures” with a mean 3.925, “Government lacking vision for BOT projects” with mean 3.92 and, “Misty of BOT projects ownership transfer procedures” with a mean 3.91, The items rated lowest influence (high level of influence) were: “Lack or weakness of time frame flexibility” with a mean 3.695 , “The complexity of government procedures and regulations” with a mean 3.705.

A look into the results in table (10), which represents the responses of the government officials, reveals that the average mean of influence of the administrative obstacles is 3.86. The results say that they (government officials) perceive a high level of influence of all those items. The highest influence obstacles from their point of view are: Poor coordination mechanisms between the government and investor” with a mean 4.11. The government claims the right to decide solely” with a mean 4.09. “Misty time limitations for transferring ownership of BOT projects to the government” with a mean 4.04. The obstacles rated lowest influence (high level of influence) were: The complexity of government procedures and regulations with mean 3.62 and, Lack or weakness of time frame flexibility with a mean 3.70.

Table (11), represents the responses the rating of businessmen to the administrative obstacles. Results appearing in this table reveal that: the average mean of this category of obstacle is 3.76, which is a high level of influence for all obstacles. In view of the businessmen, the highest level of influence among them were: Weak plans for implementing the partnership” with a mean 3.99, vagueness of BOT projects ownership transfers procedures” with a mean 3.97, Government lacking vision for BOT projects” with a mean 3.93.

Thus indicating that the administrative obstacles have a significant impact on the Palestinian infrastructure partnership projects, particularly, in the sectors of water networks and power stations. A wise management capable of implementing partnership projects, and an administrative guidance capable of managing contracts related to BOT projects. It refers to the need to reconsider administrative procedures for orientation towards the partnership strategy of the BOT. with regard to awareness of the partnership procedures, the government's role is to increase awareness of the importance of partnerships in the infrastructure sectors, as the partnership provides the BOT strategy from investors able to relieve the government in budgets for infrastructure improvement and development. In turn, to exploit the resources of this sector in other development projects. And The low number of investors is due to the absence of a legal framework in addition to the absence of incentives raises questions about the possibility of providing a safe investment environment.

Comparisons between the responses of government officials and businessmen reveal that their rating to the administrative obstacles is close to each other with means 3.86 and 3.76. But they disagree with each other about the ranking. While employees look to the absence of coordination as the highest obstacle, businessmen look to it as nearly the least influencing among the administrative obstacles. However, the presence of administrative obstacles with a high level of influence braves the way for conflicts and diffusion of focus of the two parties (government and businessmen). Literature reveals the necessity for putting a best possible administrative arrangements is a necessity for successful implementation of BOT. Variances in perception to the level of influence refers to the fact that both parties have varied interests, and This agreed with Literature (Sharaffudin & AL-Mutairi, 2015, p75), Which is an agreement between the government and the investor about the important of role to determining the administrative procedures for all phases of the BOT project in the success of the project, and noting the emergence of this role in several experiments in Kuwait.

5.2.3 Financial obstacles

Minor question: What is the level of influence of the financial obstacles on the adoption of BOT strategy in water and energy sectors in Palestine?

Financial obstacles that may hinder the adoption of BOT strategy in water and energy sectors in Palestine counted eleven items. The study tool of data collection “the questionnaire” asked the study sample members to answer

the question by rating the level of influence of those obstacles. Answers were treated and analyzed through SPSS. Results are as given in Figure (6) that represents the opinion of the sample, table (12) represents the responses of the government officials and table (13) represents the opinion of the businessmen

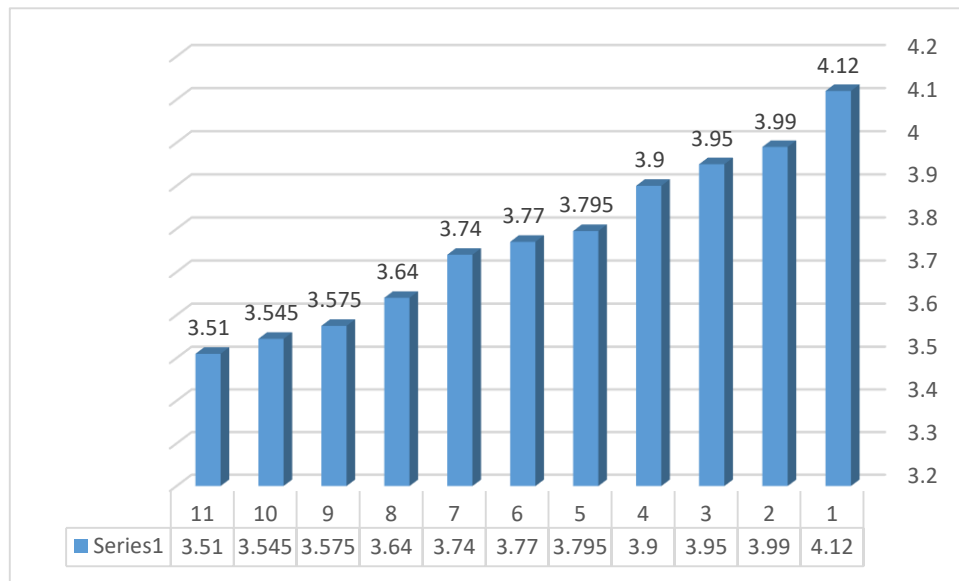


Figure (6): Financial obstacles, mean responses of the sample. (look to table num 51 in appendix)

Table (12): Financial obstacles, responses of government officials

Obstacles	mean	Std. deviation	Level
Some Parties are not convinced that BOT strategy leads to cost reduction	4.16	2.31	High
The unsatisfactory government guarantees to paying its financial obligations to the parties contributing to the BOT projects.	4.01	.79	High
The possible negative impact of entry of foreign investor	3.98	.78	High
The government does not provide Adequate guarantees to pay its dues	3.92	.69	High
Weakness ability of the government's to evaluate the completed projects	3.86	.73	High
The inability of the government to compensate investors for the additional emergency costs	3.83	.78	High
The huge financial requirements to implement BOT projects	3.62	.96	High
Weak guarantees provided by the government to investors	3.54	1.00	High
Misty or weak pricing of services and spending policies	3.53	1.00	High
Bank policies related to transfers, lending, exchange	3.50	1.00	High
Financial risks facing investors (currency rate, interest rate, inflation)	3.47	.99	High
Average	3.76	.49	High

Table (13): Financial obstacles, mean responses of businessmen

Obstacles	mean	Std. devia tion	Level
Some Parties are not convinced that BOT strategy leads to cost reduction	4.08	2.26	High
The unsatisfactory government guarantees to paying its financial obligations to the parties contributing to the BOT projects.	3.97	.84	High
The possible negative impact of entry of foreign investor	3.92	.89	High
The government does not provide Adequate guarantees to pay its dues	3.88	.75	High
The huge financial requirements to implement BOT projects	3.86	2.25	High
Weakness ability of the government's to evaluate the completed projects	3.77	.86	High
The inability of the government to compensate investors for the additional emergency costs	3.76	.88	High
Weak guarantees provided by the government to investors	3.74	1.71	High
Bank policies related to transfers, lending, exchange	3.65	1.03	High
Misty or weak pricing of services and spending policies	3.56	1.03	High
Financial risks facing investors (currency rate, interest rate, inflation)	3.55	1.03	High
Average	3.79	.60	High

Figure (6) and Tables (12), (13) reveal that the financial obstacles facing the adoption of BOT strategy in water and energy sectors are high in their influence with a mean 3.775. All the eleven financial items scored high level of influence, with means variation from 3.47 to 4.16. the highest among them were: Some Parties are not convinced that BOT strategy leads to cost reduction. The unsatisfactory government ensures paying its financial obligations to the parties contributing to the BOT projects. The negative impact of the possible entry of foreign investors. Obstacles with the least influence (but with a high level) are: Financial risks facing investors (currency rate, interest rate, inflation) and Bank policies related to transfers, lending, exchange.

A look to tables (12+13) reveals that government officials and businessmen agree on the level of influence of those obstacles with nearly the same sequence. It refers that both parties' focus on the return on assets or investments as well as their shared vision of an investment opportunity. This agreed with Literature review (Llanto, G.,2008, p337) who points that The Build-Operate-Transfer (BOT) approach is part of a range of ways with which the private sector participates in infrastructure provision. It has been widely viewed as a pragmatic approach in infrastructure provision in countries where severe budgetary constraints limit government's capacity to provide it and represent attractive investment opportunities for the private sector.

This is because of the **capital is always looking** for the safest investments. This security may be achieved with government guarantees to encourage

investors to enter partnership projects with the BOT strategy and the provision of guarantees to increase investment in the Palestinian infrastructure because of its impact in encouraging investors to enter projects in the BOT strategy. It is important to highlight the absence of studies and researches that focus on the cost of such strategies.

5.2.4 Political obstacles

Minor question: What is the level of influence of the political obstacles on the adoption of BOT strategy in water and energy sectors in Palestine?

Political obstacles that may hinder the adoption of BOT strategy in water and energy sectors in Palestine counted seven items. The study tool of data collection “the questionnaire” asked the sample members of the study to answer the question by rating the level of influence of those obstacles. Answers were treated and analyzed through SPSS. Results are as given in figure (7) represent the opinion of the study sample, table (14), pinpoints the opinion of the government officials and table (15) represents the opinion of the businessmen.

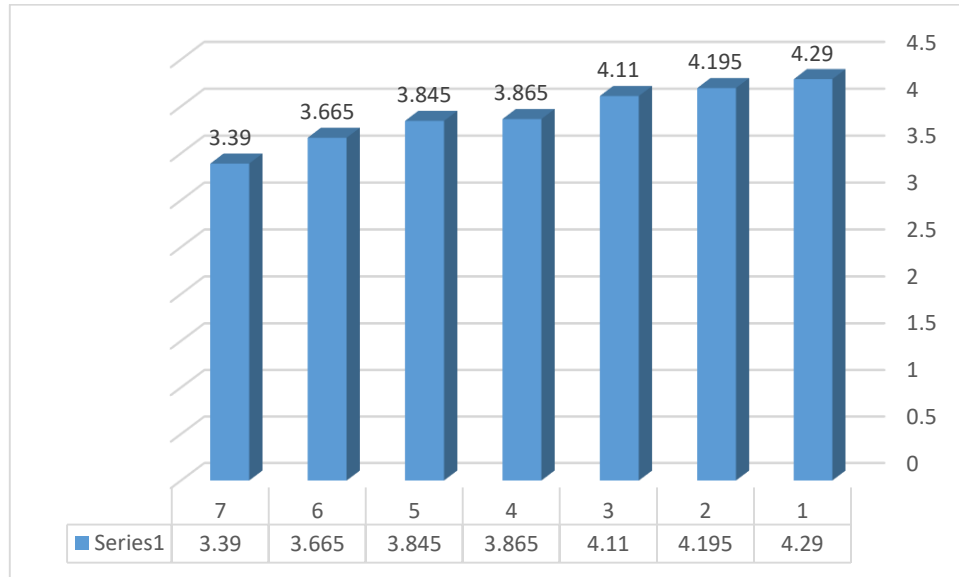


Figure (7): means of political obstacles, sample responses. (look to table num 52 in appendix)

Table (14): political obstacles, government employee's responses

items	mean	Std. deviation	Level
The strict Israeli control over large areas of land (Area C)	4.39	.73	High
Israeli Military dominance and restrictions on the use of the Palestinian infrastructure and natural resources	4.24	.77	High
The Israeli occupation orders, field practices and policies	4.19	.94	High
Intervention of political parties in the implementation of BOT projects	4.14	.81	High
International regulations imposed on banking transactions	3.86	.75	High
Government impose more limitations while implementing the partnership contract.	3.66	.84	High
Subsequent governments maydeny the obligations of the previous government	3.32	1.10	Moderate
Average	3.97	.52	High

Table (15): means of political obstacles, businessmen responses

items	mean	Std. deviation	Level
The Israeli occupation orders, field practices and policies	4.37	3.70	VeryHigh
The strict Israeli control over large areas (Area C)	4.19	.90	High
Israeli Military dominance and restrictions on the use of the Palestinian infrastructure and natural resources	4.15	.88	High
Intervention of political parties in the implementation of BOT projects	4.08	.86	High
International regulations imposed on banking transactions	3.87	.79	High
Government impose more limitations while implementing the partnership contract.	3.67	.93	High
Subsequent governments maydeny the obligations of the previous government	3.46	1.12	High
Average	3.97	.78	High

Results in figure (7) reveal the average mean of political category obstacles is high with a mean 3.97. which makes this category the highest one in its influence among the other categories. Arithmetical means in this category varieties from 3.39 to 4.29. Three items rated a very high level of influence, the highest is: “The strict Israeli control over large areas (Area C)” mean 4.29, and “Israeli Military dominance and restrictions on the use of the Palestinian infrastructure and natural resources” mean 4.195. The obstacle with lowest influence in this category is: “Subsequent governments can deny the obligations of the previous government with a mean 3.39 with a

medium level influence. have emphasized Results show the absence of political stability is one of the prime barriers for the implementation of BOT. This result agrees with the majority results of the previous studies and literature review. F. Lokiec, R. Meerovitch. (2013) wrote "A stable political environment in the relevant developing country is a mandatory pre-condition for the successful implementation of BOT projects. Private sponsors are not willing to spend the substantial amounts of time and money required to put together a BOT project, and then remain at risk for the 10 to 25 year periods that are typically required, if they cannot count on political stability and continuity over this period". (Aziz,2013) wrote "a stable political situation and favorable legislation regulation are considered as the most important factors in view of the concessionaires".

Table (14) inhabits the government officials' responses on political obstacles with a mean 3.97. Three items scored very high influence, the highest were: "The strict Israeli control over large areas (Area C)" mean 4.39 and "Israeli Military dominance and restrictions on the use of the Palestinian infrastructure and natural resources" mean 4.24. The obstacle: "Subsequent governments may deny the obligations of the previous government" is the lowest mean 3.32 described as medium level influence.

Table (15), shows the mean responses of the businessmen. Results appearing in this table reveal that the average of political obstacle is 3.97, described as a high level of influence. The following items are the highest one's: The Israelis occupation orders, field practices and policies "mean 4.37 and, the strict Israeli control over large areas (Area C) mean 4.19 with

a very high level influence. Lowest mean 3.46 " Subsequent governments can deny the obligations of the previous government".

A Comparing response of government officials and businessmen reveal that their rating to the political obstacles appears is the same means 3.97. Both parties agree on the lowest influencing obstacle which is: "Subsequent governments may deny the obligations of the previous government" described as median level influence which indicates that development cannot be establish in Palestine without full power control over large areas of development projects, Projects can be developed in partnership with the private sector in the BOT strategy, especially in the areas of the Palestinian Authority, and unite efforts to make them successful, but it is not enough to become viable projects for the private sector, in addition to limited extensions. Nevertheless, the political situation in Palestine is complicated because of the geographical division of areas in A, B, and C. Implementing such projects under this division is not easy.

5.2.5 Social obstacles

Minor question: What is the level of influence of the social obstacles on the adoption of BOT strategy in water and energy sectors in Palestine?

Social obstacles that may hinder the adoption of BOT strategy in water and energy sectors in Palestine counted five items. The study tool of data collection "the questionnaire" required the sample population of the study to answer the question by rating the level of influence of those obstacles. Answers were treated and analyzed through SPSS. Results are as given in

figure (8) That represents the attitudes of the sample as a unit, table (16) represents the attitudes of the government officials and table (17) represents the attitudes of the businessmen.

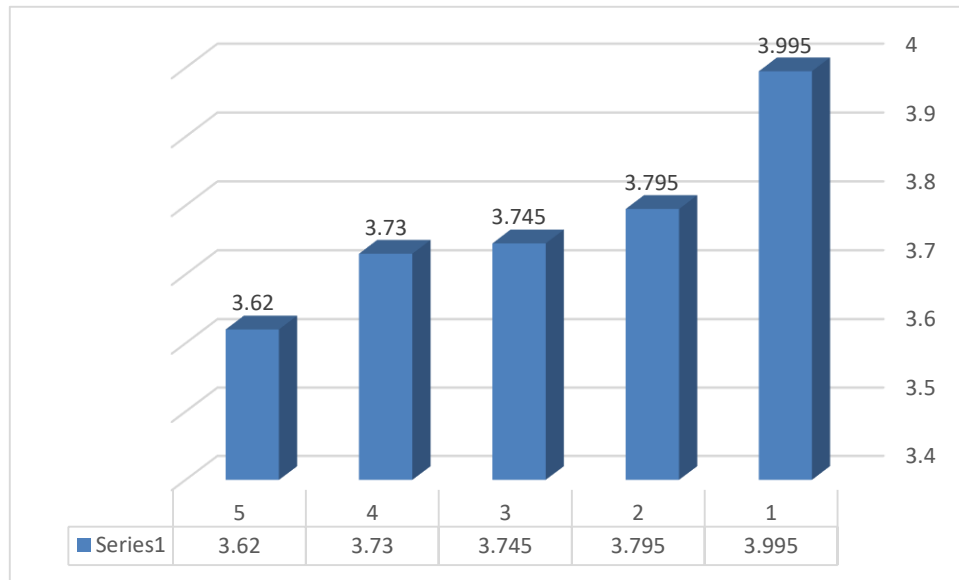


Figure (8): means of Social obstacles (overall). (look to table num 53 in appendix)

Table (16): Social obstacles, government employee's responses

items	mean	Std. deviation	Level
Absence or weak guarantees regarding public misuse of BOT facilities	4.08	.97	High
The prevailing public culture does not drive towards the profitability of the private sector	3.76	1.00	High
Investor linkages and their references	3.76	.73	High
Low investor confidence in government and societal intentions	3.70	.86	High
Low public confidence in investors intentions	3.61	.88	High
Average	3.78	.58	High

Table (17): Social obstacles, businessmen responses

Items	mean	Std. deviation	Level
Absence or weak guarantees regarding public misuse of BOT facilities	3.91	.95	High
The prevailing public culture does not drive towards the profitability of the private sector	3.83	.96	High
Low investor confidence in government and societal intentions	3.79	.91	High
Investor linkages and their references	3.70	.82	High
Low public confidence in investors intentions	3.63	1.00	High
Average	3.77	.61	High

As appearing in figure 8 social obstacles are high in their influence with an average 3.775. The highest among them is: Absence or weak guarantees regarding public misuse of BOT facilities” with a mean 3.995 The obstacles rated lowest influence (high level of influence) was: Low public confidence in investors intentions” with a mean 3.62. Literature and logic donates that the absence or weak guarantees for the public misuse will result into a lot of risks and losses. Therefore, businessmen will be reluctant to invest, and even when they do, they will remain under tension because of fearing about the fate of their assets.

Results in table 16, which represent the mean responses of the government officials, reveal that the average of influence of the obstacles is 3.78 with a high level influence on all items. The item with highest level of influence is Absence or weak guarantees regarding public misuse of BOT facilities

“mean 4.08. The items rated lowest influence (high level of influence) was: Low public confidence in investors intentions” with mean 3.61.

Table 17, represents the responses of the businessmen rating to the social obstacles. Results appearing in this table reveal that: the average of this category of obstacle is 3.77, which is a high level of influence for all obstacles in this category. In view of the businessmen, the highest level of influence among them was: Absence or weak guarantees regarding public misuse of BOT facilities “with mean 3.91 and the lowest is Low public confidence in investors intentions” with mean 3.63.

Comparisons between the responses of government officials and businessmen reveal that their ranking of social obstacle is close to each other with means 3.77 and 3.78. Even they agree with each other on the level of influence of the list of social obstacle, and this agreed with Literature (Sabri, S.,2015).

5.2.6 Technical obstacles

Minor question: What is the level of influence of the technical obstacle on the adoption of BOT strategy in water and energy sectors in Palestine?

Technical obstacle that may hinder the adoption of BOT strategy in water and energy sectors in Palestine counted six items. The study tool of data collection “the questionnaire” asked the sample members of the study to answer the question by rating the level of influence of those items. Answers were treated and analyzed through SPSS. Results are as given in figure (9) that represents the attitude of the sample as a unit, table (18) represents the

attitudes of the government officials and table (19) represents the attitudes of the businessmen.

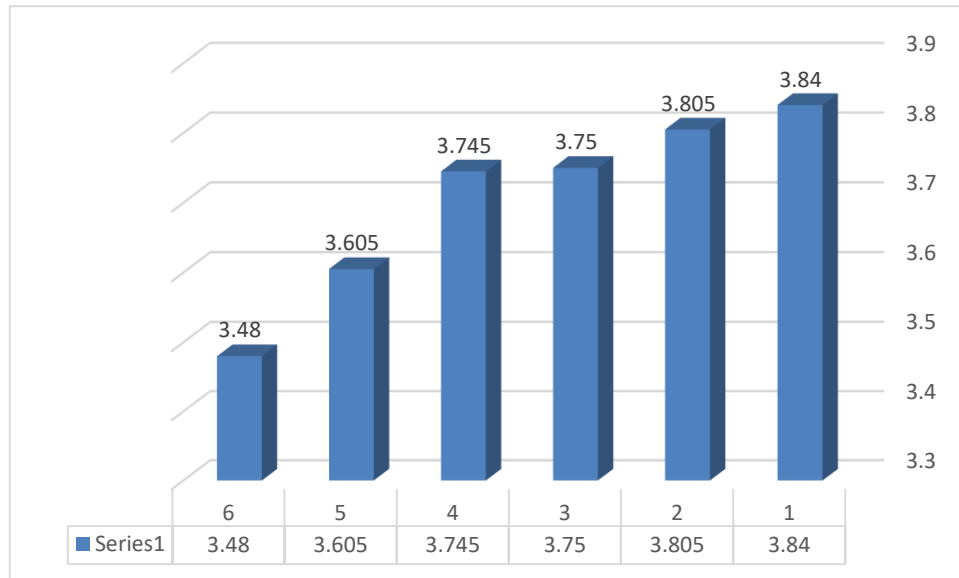


Figure (9): Technical obstacles, means of study sample responses. (look to table num 54 in appendix)

Table (18): Technical obstacles, government employee's responses

Items	mean	Std. deviation	Level
Lack or weakness of feasibility studies related to BOT projects	3.86	.90	High
The absence of standards governing the expected performance specifications	3.84	1.02	High
Lack of government experience in BOT projects management	3.77	.99	High
Government and investors don't possess the sufficient awareness regarding BOT	3.69	.85	High
Inefficient use of resources in BOT project	3.57	.94	High
Lack of experience with the contractor and investors	3.49	1.04	High
Average	3.70	.61	High

Table (19): Technical obstacles, businessmen responses

Obstacles	mean	Std. deviation	Level
The absence of standards governing the expected performance specifications	3.84	.97	High
Government and investors don't possess the sufficient awareness regarding BOT	3.80	.80	High
Lack or weakness of feasibility studies related to BOT projects	3.75	1.02	High
Lack of government experience in BOT projects management	3.73	.93	High
Inefficient use of resources in BOT project	3.64	.89	High
Lack of experience with the contractor and investors	3.47	1.03	High
Average	3.70	.59	High

figure 9 reveals that the average of technical category obstacle is high with a mean of 3.70. All items in this category were high level of their influence with arithmetical means variation from 3.47 to 3.84. The highest level of influence in this category of obstacle was: "The absence of standards governing the expected performance specifications" mean 3.84, and "Government and investors don't possess the sufficient awareness regarding BOT" with mean 3.81. The least influencing items was "Lack of experience with the contractor and investors mean 3.47 with high level of influence. Literature shows that, with the absence of performance standards, each party claims the right to understand project specifications on its own. As a result, many conflicts erupt, not only between the government and investors but also with contractors and field workers as

well. Besides that, many impediments as delays and increase in the functional cost are the ultimate consequences of such absence.

Government officials' responses as appearing in table 18, show that the average of technical obstacles is 3.70, which is described as high level of influence. All items were high in their influence with means variation from 3.86 to 3.49. The government officials felt that the highest technical items were: "Lack or weakness of feasibility studies related to BOT projects" mean 3.86, and "The absence of standards governing the expected performance specifications" mean 3.84. The lowest item was "Lack of experience with the contractor and investors" with a mean 3.49.

Table 19, represents the responses of the businessmen. Results appearing in this table reveal that the average of technical obstacle was 3.70, a high level of influence of all. In view of the businessmen, the highest item was "the absence of standards governing the expected performance specifications" with a mean 3.84. while the lowest was "lack of experience with the contractor and investors" with a mean 3.47.

That indicating the weak public sector ability to conduct feasibility studies to estimate costs and enter into agreements with the private sector.

A glance to responses of government officials and businessmen reveal that their rating to the technical obstacles appears the same means 3.70. Both parties agree that: "the absence of standards governing the expected performance specifications" is the highest technical obstacle, and "lack of experience with the contractor and investors" is the weakest among them, and this agreed with Literature (Toulabi, H.M.,

2013, p2039) who saw that there are risks in the project which are the technical issues of the project. The risks specific to the project and do not have unlike investment risk, are often controlled by the private sector. Technical risk includes the risk of the customer, preparations, the expected performance specifications, market, financing, implemented, and operation.

Past result Conclusion

It is clear that political obstacles are the most dominant factors. Results show that the occupation and its practices are the central impediments among the others. Results of other researches show the same conclusion. Thus it becomes imperative that without the solution of this political issue many aspects of the Palestinian will remain miserable especially in achieving sustainable development.

The highest obstacle:

A look to the 55 items grouped into six categorized, below is a list of the highest that face the adoption of BOT strategy in water and energy sectors in Palestine. They are as given in three table.

Table 20: highest five Items face the adoption of BOT strategy from the study sample point of view.

highest five items	Mean	Category	Level of influence
The strict Israeli control over large areas (Area C)	4.30	Political	Very high
Absence of the role of the Legislative Council in passing laws for BOT adoption	4.24	legal	Very High
Israeli Military dominance and restrictions on the use of the Palestinian infrastructure and natural resources	4.20	Political	Very high
Some Parties are not convinced that BOT strategy leads to cost reduction	4.12	Financial	High
Intervention of political parties in the implementation of BOT projects	4.11	Political	High

It is clear that political obstacle items were the most dominant factors to the adoption of BOT in water and energy sectors in Palestine. Statistical results show that government officials and businessmen agree on four items which are termed as the highest in their influence. The perceived influence of items from both parties point of view is given in tables 21 and 22 .

Table 21: The highest five influencing items from the businessmen point of view

items	Mean	Category	Level of influence
The Israeli occupation orders, field practices and policies	4.37	political	Very high
Absence of the role of the Legislative Council in passing laws for BOT adoption	4.21	legal	Very High
The strict Israeli control over large areas (Area C)	4.20	Political	Very high
Israeli Military dominance and restrictions on the use of the Palestinian infrastructure and natural resources	4.16	Political	High
Intervention of political parties in the implementation of BOT projects	4.08	Political	High
Some Parties are not convinced that BOT strategy leads to cost reduction	4.08	Financial	High

Table 22: The five highest influencing obstacles from the government officials point of view

items	Mean	Category	Level of influence
The strict Israeli control over large areas (Area C)	4.39	Political	Very high
Absence of the role of the Legislative Council in passing laws for BOT adoption	4.27	legal	Very High
Israeli Military dominance and restrictions on the use of the Palestinian infrastructure and natural resources	4.24	Political	Very high
Some Parties are not convinced that BOT strategy leads to cost reduction	4.16	Financial	High
Intervention of political parties in the implementation of BOT projects	4.14	Political	High

Tables 21 and 22 show that while the government official perceive “Absence of the role of the Legislative Council in drafting BOT laws” obstacles very high in its influence, businessmen perceived “Some parties are not convinced that BOT strategy leads to cost reduction” Results show that the occupation and its practices are the central obstacles among the others. Conclusions of this research agree with the those of the previous researches that the core obstacles to the adoption of BOT is the political one (F. Lokiec, R. Meerovitch. 2013, p7). That is more insisting because of the fact of the Israeli occupation to Palestine.

5.3 Results related to the second main question, which reads:

Are there any statistically significant differences at the significance level ($\alpha = 0.05$) in the obstacles to the adoption of the BOT strategy in Water and Energy sectors in Palestine attributed to the following variables: gender, age group, institutional reference, functional status, years Experience,

qualification, specialization, and persuasion? Answers for each of the following variables are given below:

5.3.1 Gender variable

To examine the first component of the question which is related to gender variable, t Test was used. The results are as given in table (23):

Table (23): t. Test Results for gender variable

	Category	gender	Counts	Mean	St. Dev.	T	Significance
Government Officials (Water & Energy)	Legal	Male	102	3.6399	.74086	-3.622-	.000
		Female	79	3.9885	.55381		
	Administrative	Male	102	3.7922	.60152	-2.206-	.029
		Female	79	3.9553	.38957		
	Financial	Male	102	3.7576	.55693	-.224-	.823
		Female	79	3.7733	.38676		
	Political	Male	102	3.9580	.50441	-.372-	.711
		Female	79	3.9873	.54432		
	Social	Male	102	3.8020	.64944	.571	.569
		Female	79	3.7544	.47062		
	Technical	Male	102	3.5572	.66770	-3.967-	.000
		Female	79	3.8924	.46764		
	Total	Male	79	3.8919	.34796	-2.158-	.032
		Female	102	3.6399	.74086		
Businessmen	Legal	Male	191	3.8425	.64389	1.195	.316
		Female	4	3.3409	.83443		
		Male	191	3.8545	.55256	.939	.415

	Administrative	Female	4	3.5167	.71466		
	Financial	Male	191	3.7982	.59630	.625	.575
		Female	4	3.5909	.65765		
	Political	Male	191	3.9865	.77849	3.036	.049
		Female	4	3.2500	.47201		
	Social	Male	191	3.7843	.60207	1.381	.260
		Female	4	3.1500	.91469		
	Technical	Male	191	3.7059	.59215	.222	.838
		Female	4	3.6250	.72489		
	Total	Male	191	3.8286	.46481	1.207	.312
		Female	4	3.4122	.68674		

.Statistically significant at significance level (0.05)

Table (23) shows that there are statistically significant differences at the level of significance ($\alpha = 0.05$) in obstacles of adopting BOT strategy in Water and Energy sectors in Palestine attributed to gender variable. This deference was on the total degree of government employees with reference to the following categories: legal, administrative and technical.

There were no statistically significant differences at the level of significance ($\alpha = 0.05$) in obstacles of adopting BOT strategy in water and energy sectors in Palestine attributed to the gender variable to the following categories: financial, political and social. that is to say, the responses of respondents on the third, fourth and fifth dimensions are not affected by the gender variable as they are aware of the physical. The researcher pointed

out that the legal, administrative and technical obstacles is procedures and models perceived by the parties nor undisputed.

For classified businessmen (A), there were no statistically significant differences at the level of significance ($\alpha= 0.05$) in the obstacles of applying the BOT model in the Palestinian infrastructure due to the gender variable on the total score and legal, administrative, financial, social and technical dimensions, that is to say, the available information on partnership with BOT strategy available equally to both gender.

While there are differences on the fourth dimension. It seems from the arithmetic averages that it was for males; because males are more aware of political drawbacks than females and are more interested and knowledgeable about the political side.

Table (24): t. Test Results for overall samples

	Category	gender	Counts	Mean	St. Dev.	T	Significance
Government Officials (Water & Energy) &businessmen	Legal	Male	233	3.8205	.68458	-1.032-	.309
		Female	27	3.9596	.66006		
	Administrative	Male	233	3.8641	.58136	-.570-	.572
		Female	27	3.9111	.38028		
	Financial	Male	233	3.8088	.58068	1.235	.223
		Female	27	3.7104	.36367		
	Political	Male	233	3.9871	.74261	1.350	.185
		Female	27	3.8201	.59113		
	Social	Male	233	3.8180	.62493	1.555	.129
		Female	27	3.6593	.48616		
	Technical	Male	233	3.0637	.50914	-2.071-	.046
		Female	27	3.2407	.40912		
	Total	Female	27	3.7169	.37599	.129	.898
		Male	233	3.8205	.68458		

Table shows that there are no statistically significant differences at the level of significance ($\alpha = 0.05$) in the obstacles of adopting the BOT model in the Palestinian infrastructure due to the gender variable on total score and on the first, second, third, fourth and fifth dimension where the level of significance of the values of (T) is greater than (0.05), thus accept the null hypothesis

5.3.2 Age variable:

Are there any statistically significant differences at the significance level ($\alpha = 0.05$) in the obstacles to the adoption of BOT strategy in Water and Energy sectors in Palestine attributed to age variable? To answer the question one-way ANOVA Test was adopted. The results are as shown in table (25) below:

Table (25): significance attributed to age variable.

	Category	Source of variance	Sum of squares	DF	Mean Square	F	Sig.
Government Officials Water and Energy)	Legal	Between Groups	4.013	4	1.003	2.186	.072
		Within Groups	80.756	176	.459		
		Total	84.769	180			
	Administrative	Between Groups	1.776	4	.444	1.635	.167
		Within Groups	47.791	176	.272		
		Total	49.567	180			
	Financial	Between Groups	1.201	4	.300	1.264	.286
		Within Groups	41.805	176	.238		
		Total	43.006	180			
	Political	Between Groups	2.338	4	.584	2.212	.070
		Within Groups	46.508	176	.264		
		Total	48.846	180			
	Social	Between Groups	2.754	4	.688	2.118	.081
		Within Groups	57.222	176	.325		
		Total	59.976	180			
	Technical	Between Groups	1.637	4	.409	1.100	.358
		Within Groups	65.451	176	.372		
		Total	67.088	180			
	Total	Between Groups	1.502	4	.375	1.792	.132

		Within Groups	36.868	176	.209		
		Total	38.370	180			
Businessmen	Legal	Between Groups	.484	4	.121	.282	.889
		Within Groups	81.363	190	.428		
		Total	81.846	194			
	Administrative	Between Groups	.023	4	.006	.018	.999
		Within Groups	59.967	190	.316		
		Total	59.991	194			
	Financial	Between Groups	1.650	4	.413	1.164	.328
		Within Groups	67.375	190	.355		
		Total	69.026	194			
	Political	Between Groups	.044	4	.011	.018	.999
		Within Groups	117.899	190	.621		
		Total	117.943	194			
	Social	Between Groups	.376	4	.094	.246	.912
		Within Groups	72.583	190	.382		
		Total	72.959	194			
	Technical	Between Groups	.643	4	.161	.452	.771
		Within Groups	67.581	190	.356		
		Total	68.224	194			
	Total	Between Groups	.084	4	.021	.092	.985
		Within Groups	43.060	190	.227		
		Total	43.144	194			

Statistically significant at significance level (0.05)

Table 25 shows there are no statistically significant differences at the level of significance ($\alpha = 0.05$) in the obstacles of BOT strategy adoption in the Palestinian Water and Energy due to age variable. As total score and all dimension where the level of significance of the values of (f) is greater than (0.05), thus accept the null hypothesis

The researcher pointed out to the fact that age difference does not affect on their understanding for partnership obstacles of BOT strategy in six areas.

This is consistent with classified business (A) if there were no statistically significant differences at the level of significance ($\alpha = 0.05$) in the application obstacles of the BOT model in the Palestinian infrastructure due to the variable age group on all dimensions and the total score, where the significance level for the values of $(P)(0.05)$. This accepts the hypothesis.

This indicates that the respondents in the public-private sectors are not affected by their opinions and convictions about the drawbacks in the six fields according to their ages, but they agree on the existence of these obstacles. The researcher indicates that the majority of age group, which responses were high and converging. Additionally, the presence of knowledge provided by technology has reduced the differences in the perception of obstacles to partnership by the BOT strategy. Thus receiving the knowledge provided by technology not related to age.

Table (26): significance attributed to overall samples

	Category	Source of variance	Sum of squares	DF	Mean Square	F	Sig.
Government Officials (Water and Energy) & businessmen	Legal	Between Groups	3.345	4	.836	1.820	.125
		Within Groups	117.176	255	.460		
		Total	120.522	259			
	Administrative	Between Groups	1.532	4	.383	1.210	.307
		Within Groups	80.693	255	.316		
		Total	82.225	259			
	Financial	Between Groups	2.444	4	.611	1.961	.101
		Within Groups	79.457	255	.312		
		Total	81.900	259			
	Political	Between Groups	.253	4	.063	.118	.976
		Within Groups	137.448	255	.539		
		Total	137.701	259			
	Social	Between Groups	1.143	4	.286	.757	.554
		Within Groups	96.216	255	.377		
		Total	97.359	259			
	Technical	Between Groups	.695	4	.174	.687	.602
		Within Groups	64.554	255	.253		
		Total	65.250	259			
	Total	Between Groups	.736	4	.184	.851	.494
		Within Groups	55.158	255	.216		
		Total	55.894	259			

Table 26 shows that there were no statistically significant differences at the significance level of ($\alpha = 0.05$) in the obstacles of adopting the BOT model in the Palestinian infrastructure from the point of view of workers in Water and Energy Authorities and the classified businessmen due to the variable age group.

5.3.3 Institutional Reference variable:

Are there any statistically significant differences at the significance level ($\alpha = 0.05$) in the obstacles to the adoption of the BOT strategy in the Water and Energy sectors in Palestine attributed to the institutional reference variable?

To answer this question t. Test was used, the results are as shown in table (27)

Table (27): statistical differences attributed to the institutional

		Reference	num	mean	St. deviation	T	Sig.
Government Officials (Water and Energy)	Legal	Water	121	3.9106	.67949	3.463	.001
		Energy	60	3.5530	.64092		
	Administrative	Water	121	3.9537	.52802	3.516	.001
		Energy	60	3.6811	.47174		
	Financial	Water	121	3.8415	.43385	2.837	.006
		Energy	60	3.6091	.55621		
	Political	Water	121	4.0295	.50974	2.151	.034
		Energy	60	3.8524	.52733		
	Social	Water	121	3.9322	.52189	5.223	.000
		Energy	60	3.4767	.56699		
	Technical	Water	121	3.8554	.59859	5.330	.000
		Energy	60	3.3972	.51539		
	Total	Water	121	3.9205	.44802	4.857	.000
		Energy	60	3.5949	.41234		

Statistically significant at significance level (0.05)

Tables 27 Show that here were statistically significant differences at the level of significance ($\alpha = 0.05$) in the obstacles of BOT strategy adoption in water and energy sectors in Palestine on the total score and all dimensions. where the significance level of the T values is less than (0.05)

It appears from the arithmetic averages that it was in favor of the Water Authority. This is due to the awareness of the Water Authority employees of the importance of the obstacles to the water sector, especially from the Israeli side, specifically in the final file of the negotiations and is related to the size of the restrictions imposed by the occupation on water. Thus, it rejects the null hypothesis.

5.3.4 functional variable

There were no statistically significant differences at the level of significance ($\alpha = 0.05$) in the application obstacles of the BOT model in the Palestinian infrastructure from the point of view of the employees in Water and Energy Authorities due to the functional variable.

To examine the hypothesis, use ANOVA and Table 28 shows the results

Table (28): analysis results of the single variance to indicate the differences in the obstacles of applying the BOT model in the Palestinian infrastructure from the point of view of employees in Water and Energy Authorities

	The dimensions	variance Source	Total deviation squares	Df.	mean squares	Value f	Sig.
employees in the Water, Energy and Natural Resources Authority	The first dimension: legality	Between groups	1.266	3	.422	.895	.445
		Inside groups	83.503	177	.472		
		The total	84.769	180			
	The second dimension: administrative	Between groups	.459	3	.153	.551	.648
		Inside groups	49.108	177	.277		
		The total	49.567	180			
	The third dimension: financial	Between groups	1.833	3	.611	2.627	.052
		Inside groups	41.173	177	.233		
		The total	43.006	180			
	The fourth dimension: political	Between groups	2.084	3	.695	2.630	.052
		Inside groups	46.761	177	.264		
		The total	48.846	180			
	The fifth dimension: social	Between groups	2.426	3	.809	2.487	.062
		Inside groups	57.550	177	.325		
		The total	59.976	180			
	The sixth dimension: technical	Between groups	.439	3	.146	.389	.761
		Inside groups	66.648	177	.377		
		The total	67.088	180			
	Total	Between	.585	3	.195	.913	.436

		groups					
		Inside groups	37.785	177	.213		
		The total	38.370	180			

Table (28) shows that there are no statistically significant differences at the level of significance ($\alpha = 0.05$) in application obstacles of the BOT model in the Palestinian infrastructure from the perspective of the employees in Water and Energy Authorities Due to the variable functional characteristics on all dimensions and the total score. where the significance level of the values of (P) is greater than (0.05). This accepts the hypothesis.

The researcher concludes that the general information about partnership projects are equally available to all. The parties have knowledge of what is being said about partnership and in-depth knowledge of contracting with the private sector. Therefore, their awareness of the obstacles were equal.

Table (29): Results of One Way ANOVA test (overall)

	The dimensions	variance Source	Total deviation squares	Df.	mean squares	Value f	Sig.
Government officials (water & energy) & businessmen	The first dimension: legality	Between groups	2.939	4	.735	1.593	.176
		Inside groups	117.583	255	.461		
		The total	120.522	259			
	The second dimension: administrative	Between groups	2.053	4	.513	1.632	.167
		Inside	80.173	255	.314		

		groups					
		The total	82.225	259			
	The third dimension: financial	Between groups	1.476	4	.369	1.170	.325
		Inside groups	80.424	255	.315		
		The total	81.900	259			
	The fourth dimension: political	Between groups	1.060	4	.265	.495	.740
		Inside groups	136.641	255	.536		
		The total	137.701	259			
	The fifth dimension: social	Between groups	2.188	4	.547	1.465	.213
		Inside groups	95.172	255	.373		
		The total	97.359	259			
	The sixth dimension: technical	Between groups	.379	4	.095	.372	.828
		Inside groups	64.871	255	.254		
		The total	65.250	259			
	Total	Between groups	.634	4	.158	.731	.571
		Inside groups	55.260	255	.217		
		The total	55.894	259			

Table (29) shows that there are no statistically significant differences at the level of significance ($\alpha = 0.05$) in application obstacles of the BOT model in

the Palestinian infrastructure from the perspective of the employees in Water and Energy Authorities& businessmen Due to the variable functional characteristics on all dimensions and the total score. where the significance level of the values of (F) is greater than (0.05). This accepts the hypothesis.

5.3.5 Years of experience:

Are there any statistically significant differences at significance level ($\alpha = 0.05$) in the obstacles of the BOT strategy adoption in Water and energy sectors in Palestine attributed to years of experience variable? To answer this question One Way ANOVA Test was adopted. The results are as shown in table 30:

Table (30): results of the single variance differences attributed to the years of experience

	Category	Source of Variance	Sum of squares	DF	Mean square	F	Sign.
Government officials & Water energy)	Legal	Between groups	7.541	4	1.885	4.296	.002
		Within groups	77.229	176	.439		
		Total	84.769	180			
	Administrative	Between groups	5.361	4	1.340	5.336	.000
		Within groups	44.206	176	.251		
		Total	49.567	180			
	Financial	Between groups	2.057	4	.514	2.210	.070
		Within groups	40.949	176	.233		
		Total	43.006	180			
	Political	Between groups	5.442	4	1.360	5.517	.000
		Within groups	43.404	176	.247		
		Total	48.846	180			
	Social	Between groups	2.150	4	.538	1.636	.167
		Within groups	57.826	176	.329		

		Total	59.976	180			
	Technical	Between groups	16.624	4	4.156	14.495	.000
		Within groups	50.463	176	.287		
		Total	67.088	180			
	Total	Between groups	4.281	4	1.070	5.525	.000
		Within groups	34.089	176	.194		
		Total	38.370	180			
	Category	Source of variance	Sum of squares	DF	Mean square	F	Sign.
Businessmen	Legal	Between groups	.681	4	.170	.399	.809
		Within groups	81.165	190	.427		
		Total	81.846	194			
	Administrative	Between groups	.661	4	.165	.530	.714
		Within groups	59.329	190	.312		
		Total	59.991	194			
	Financial	Between groups	1.357	4	.339	.953	.435
		Within groups	67.669	190	.356		
		Total	69.026	194			
	Political	Between groups	.489	4	.122	.198	.939
		Within groups	117.454	190	.618		
		Total	117.943	194			
	Social	Between groups	.732	4	.183	.481	.750
		Within groups	72.228	190	.380		
		Total	72.959	194			
	Technical	Between groups	2.008	4	.502	1.440	.222
		Within groups	66.217	190	.349		
		Total	68.224	194			
	Total	Between groups	.142	4	.036	.157	.960
		Within groups	43.001	190	.226		
		Total	43.144	194			

Statistically significant at significance level (0.05)

Table 30 (years of experience) shows that there are statistically significant differences in adopting BOT strategy in water and energy sectors in Palestine attributed to the years of experience. To find out in favor of

which category those difference is, L.S.D test was used. Results are as appearing in table (31) below:

Table (31): L.S.D differences test for years of experience.

Category	Years of experience	Less than 2 years	2 to less than 5	5- less than 10	10-less than 15	15and above	Sig
Legal obstacles	Less than 2		.02064	-.09848-	-.52706-*	-.06291-	.92
	2-less than 5			-.11912-	-.54769-*	-.08355-	
	5-less than 10				-.42857-*	.03557	
	10-less than 15					.46414*	.00
	15-above						
Category	Years of experience	Less than 2 years	2 to less than 5	5- less than 10	10-less than 15	15and above	Sig
Administrative	Less than 2		-.26839-	-.18077-	-.58968-*	-.32101-*	
	2-less than 5			.08762	.32129-*	.05262-	
	5-less than 10				-.40891-*	-.14025-	
	10-less than 15					.26867*	.01
	15-above						
Political	Less than 2		-.01396-	-.00183-	-.43878-*	-.12940-	

	2-less than 5			.01213	- .42482- *	- .11544-	
	5-less than 10				- .43694- *	- .12757-	
	10-less than 15					30938*	.00
	15-above						
Technical	Less than 2		.03113	.32799	- .51389- *	- .01147-	
							.05
							.00
							.94
	2-less than 5			.29686*	- .54502- *	- .04260-	
	5-less than 10				- .84188- *	- .33946- *	
	10-less than 15					.50242*	.00
	15-above						
Total	Less than 2		- .18013-	- .11576-	- .49227- *	- .21785-	
	2-less than 5			.06437	- .31214- *	- .03771-	
	5-less than 10				- .37650- *	- .10208-	
	10-less than 15					.27442*	.00
	15-above						

Table 31 shows that there are statistically significant differences at the level of significance ($\alpha = 0.05$) in of the BOT model in the Palestinian infrastructure based on government official responses in the legal category were: between (less than 2 years) and (10 to less than 15) in favor of 10 to

less than 15. between (2 to less than 5 years) and (10 to less than 15 years) in favor of 10 to less than 15. Between (5 to less than 10 years) and (10 to less than 15) in favor of 10 to less than 15 years. Between (10 to less than 15 years) and (15years and above) in favor of 15 years and above. Such results show that the higher years of experience are, the stronger they perceive those obstacles.

The L.S.D test shows that the differences were in favor of category (10-15) years. The researcher pointed out to the fact that this category represents a link between developments in the BOT projects and what was done in previous contracts with the private sector.

As for the business sector, there were no statistically significant differences at the significance level of ($\alpha = 0.05$) in the obstacles of adopting the BOT strategy in water and energy sectors in Palestine due to the variable years of experience.

Table (32): results of the single variance differences attributed to the years of experience(overall)

	Category	Source of Variance	Sum of squares	DF	Mean square	F	Sign.
Government officials (water & energy) & businessmen	Legal	Between groups	.972	4	.243	.518	.722
		Within groups	119.550	255	.469		
		Total	120.522	259			
	Administrative	Between groups	.121	4	.030	.094	.984
		Within groups	82.105	255	.322		
		Total	82.225	259			
	Financial	Between groups	1.377	4	.344 .316	1.090	.362

		Within groups	80.523	255			
		Total	81.900	259			
	Political	Between groups	1.435	4	.359 .534	.671	.612
		Within groups	136.266	255			
		Total	137.701	259			
	Social	Between groups	.508	4	.127 .380	.334	.855
		Within groups	96.852	255			
		Total	97.359	259			
	Technical	Between groups	.776	4	.194	.768	.547
		Within groups	64.473	255	.253		
		Total	65.250	259			
	Total	Between groups	.237	4	.059	.272	.896
		Within groups	55.657	255	.218		
		Total	55.894	259			

Table 32 shows that there were no statistically significant differences at the significance level of ($\alpha = 0.05$) in the obstacles of adopting the BOT model in the Palestinian infrastructure from the point of view of workers in Water and Energy Authorities and the classified businessmen(A) due to the variable years of experience.

5.3.6 Academic qualifications:

Are there any statistically significant differences at significance level ($\alpha = 0.05$) in the obstacles of the BOT strategy adoption in Water and energy sectors in Palestine attributed to academic qualifications variable? To answer this question One Way ANOVA test was adopted. The results are as shown in table (33):

Table (33): Results of One Way ANOVA test, government official's responses attributed to academic qualifications.

	Category	Source of variance	Sum of squares	DF	Mean square	F	Sign.
Government officials (water & energy)	Legal	Between Groups	1.890	3	.630	1.345	.261
		Within groups	82.880	177	.468		
		Total	84.769	180			
	Administrative	Between Groups	1.713	3	.571	2.112	.100
		Within groups	47.854	177	.270		
		Total	49.567	180			
	Financial	Between Groups	.376	3	.125	.521	.669
		Within groups	42.630	177	.241		
		Total	43.006	180			
	Political	Between Groups	1.007	3	.336	1.243	.296
		Within groups	47.838	177	.270		
		Total	48.846	180			
	Social	Between Groups	.970	3	.323	.969	.408
		Within groups	59.007	177	.333		
		Total	59.976	180			
	Technical	Between Groups	2.536	3	.845	2.318	.077
		Within groups	64.552	177	.365		
		Total	67.088	180			
	Total	Between Groups	1.021	3	.340	1.613	.188
		Within groups	37.349	177	.211		
		Total	38.370	180			
	Category	Source of variance	Sum of square	DF	Mean square	F	Sign.
Businessmen	Legal	Between Groups	1.520	3	.507	1.205	.309

		Within groups	80.326	191	.421		
		Total	81.846	194			
	Administrative	Between Groups	.637	3	.212	.683	.563
		Within groups	59.354	191	.311		
		Total	59.991	194			
	Financial	Between Groups	1.208	3	.403	1.134	.337
		Within groups	67.818	191	.355		
		Total	69.026	194			
	Political	Between Groups	4.496	3	1.499	2.523	.059
		Within groups	113.447	191	.594		
		Total	117.943	194			
	Social	Between Groups	1.181	3	.394	1.048	.373
		Within groups	71.778	191	.376		
		Total	72.959	194			
	Technical	Between Groups	2.416	3	.805	2.338	.075
		Within groups	65.808	191	.345		
		Total	68.224	194			
	Total	Between Groups	.579	3	.193	.867	.459
		Within groups	42.564	191	.223		
		Total	43.144	194			

Statistically significant at significance level (0.05)

Table 33 Shows that there were no statistically significant differences at the level of significance ($\alpha = 0.05$) in the obstacles adopting BOT strategy in the Palestinian Water and Energy sectors due to the variable of the scientific qualification in view of all sample members (government employees and businessmen).

Table (34): Results of One Way ANOVA test, government officials responses attributed to academic qualifications(overall)

	Category	Source of variance	Sum of squares	DF	Mean square	F	Sign.
Government officials (water & energy) & businessmen	Legal	Between Groups	.717	3	.239	.511	.675
		Within groups	119.805	256	.468		
		Total	120.522	259			
	Administrative	Between Groups	.734	3	.245	.769	.512
		Within groups	81.491	256	.318		
		Total	82.225	259			
	Financial	Between Groups	.835	3	.278	.879	.453
		Within groups	81.065	256	.317		
		Total	81.900	259			
	Political	Between Groups	3.759	3	1.253	2.395	.069
		Within groups	133.942	256	.523		
		Total	137.701	259			
	Social	Between Groups	1.662	3	.554	1.482	.220
		Within groups	95.698	256	.374		
		Total	97.359	259			
	Technical	Between Groups	.292	3	.097	.383	.765
		Within groups	64.958	256	.254		
		Total	65.250	259			
	Total	Between Groups	.700	3	.233	1.083	.357
		Within groups	55.194	256	.216		
		Total	55.894	259			
	Category	Specialization	counts	Mean	St. Dev.	T	Sign.
Government officials (water & energy)	Legal	Humanities	100	3.7209	.73427	-1.585-	.115
		Scientific	81	3.8799	.61504		
	Administrative	Humanities	100	3.8747	.58873	.332	.741
		Scientific	81	3.8494	.43624		
	Financial	Humanities	100	3.8318	.56061	2.168	.032
		Scientific	81	3.6813	.36875		
	Political	Humanities	100	3.9629	.53707	-.229-	.819
		Scientific	81	3.9806	.50343		
	Social	Humanities	100	3.8600	.63786	2.120	.035
		Scientific	81	3.6840	.47840		
	Technical	Humanities	100	3.7233	.62953	.488	.626

		Scientific	81	3.6790	.58912		
		Humanities	100	3.8289	.52796		
	Total	Scientific	81	3.7924	.36598	.549	.584
		Humanities	100	3.7209	.73427		
		Specialization	Counts	Mean	St. dev.	T	Sign.
Businessmen	Legal	Humanities	132	3.8705	.63791	1.173	.243
		Scientific	63	3.7518	.67127		
	Administrative	Humanities	132	3.8465	.51151	-.035-	.972
		Scientific	63	3.8497	.64402		
	Financial	Humanities	132	3.8485	.63509	2.034	.044
		Scientific	63	3.6797	.49142		
	Political	Humanities	132	3.9903	.84270	.538	.591
		Scientific	63	3.9320	.63207		
	Social	Humanities	132	3.7758	.65150	.158	.874
		Scientific	63	3.7619	.52898		
	Technical	Humanities	132	3.7336	.55559	.938	.351
		Scientific	63	3.6429	.66523		
	Total	Scientific	63	3.7697	.47338	1.030	.305

Table (34) shows that there are no statistically significant differences at the level of significance ($\alpha = 0.05$) in the obstacles of applying the BOT model in the Palestinian infrastructure due to the variable of scientific qualification on all dimensions and the total score where significance level of the values of (f) is greater than (0.05). Thus, it accepts the hypothesis. The researcher pointed out that the awareness of respondents to the obstacles of partnership in the six fields were not affected by the different qualification of respondents. Although their qualifications differ, they work in the Energy and Water Authority, two governmental sectors. The work they do is primarily administrative work, that is to say, their understanding of the four obstacles is the result of their work and the availability of information about them despite the differences of qualification. This is consistent with businessmen. The researcher pointed out the fact that the

interests of businessmen investment are not related to their scientific qualifications.

5.3.7 Specialization:

Are there any statistically significant differences at significance level ($\alpha = 0.05$) in the obstacles of BOT strategy adoption in Water and energy sectors in Palestine attributed to specialization variable? To answer this question t. Test was adopted. The results are as shown in table (35):

Table (35): t. Test results of significance attributed to specialization

	Category	Specialization	counts	Mean	St. Dev.	T	Sign.
Government officials (water & energy)	Legal	Humanities	100	3.7209	.73427	-1.585-	.115
		Scientific	81	3.8799	.61504		
	Administrative	Humanities	100	3.8747	.58873	.332	.741
		Scientific	81	3.8494	.43624		
	Financial	Humanities	100	3.8318	.56061	2.168	.032
		Scientific	81	3.6813	.36875		
	Political	Humanities	100	3.9629	.53707	-.229-	.819
		Scientific	81	3.9806	.50343		
	Social	Humanities	100	3.8600	.63786	2.120	.035
		Scientific	81	3.6840	.47840		
	Technical	Humanities	100	3.7233	.62953	.488	.626
		Scientific	81	3.6790	.58912		
		Humanities	100	3.8289	.52796		
	Total	Scientific	81	3.7924	.36598	.549	.584
		Humanities	100	3.7209	.73427		
		Specialization	Counts	Mean	St. dev.	T	Sign.
Businessmen	Legal	Humanities	132	3.8705	.63791	1.173	.243
		Scientific	63	3.7518	.67127		
	Administrative	Humanities	132	3.8465	.51151	-.035-	.972
		Scientific	63	3.8497	.64402		
	Financial	Humanities	132	3.8485	.63509	2.034	.044
		Scientific	63	3.6797	.49142		
	Political	Humanities	132	3.9903	.84270	.538	.591
		Scientific	63	3.9320	.63207		
	Social	Humanities	132	3.7758	.65150	.158	.874
		Scientific	63	3.7619	.52898		
	Technical	Humanities	132	3.7336	.55559	.938	.351
		Scientific	63	3.6429	.66523		
	Total	Scientific	63	3.7697	.47338	1.030	.305

Statistically significant at significance level (0.05)

Table 35 shows that there are no statistically significant differences at the level of significance ($\alpha = .05$) in the obstacles of adopting BOT model strategy in the Palestinian Water and Energy sectors due to the specialization variable on the total scores. But on the categories level there

appears significant differences in the responses of government official on social and financial categories.

As per the responses of businessmen the significant differences appeared on the financial category. The researcher pointed out that the financial aspect is a dilemma in partnership projects, because the financial side is more linked to corruption, transparency and integrity.

Table (36): t. Test results of significance attributed to specialization(overall)

	Category	Specialization	counts	Mean	St. Dev.	T	Sign.
Govt. officials(water and energy) & businessmen	Legal	Humanities	170	3.8278	.70021	-.237	.813
		Scientific	90	3.8485	.65029	-	
	Administrative	Humanities	170	3.8537	.55783	-.593	.554
		Scientific	90	3.8978	.57594	-	
	Financial	Humanities	170	3.8380	.60549	1.686	.093
		Scientific	90	3.7242	.46424		
	Political	Humanities	170	3.9672	.79198	-.084	.933
		Scientific	90	3.9746	.59678	-	
	Social	Humanities	170	3.8071	.67021	.219	.827
		Scientific	90	3.7911	.49073		
	Technical	Humanities	170	3.0922	.48617	.433	.665
		Scientific	90	3.0630	.53269		
	Total	Humanities	170	3.7310	.48539	.248	.804
		Scientific	90	3.7165	.42486		

Statistically significant at significance level (0.05)

Table (36) shows that there are no statistically significant differences at the level of significance ($\alpha = 0.05$) in the obstacles of applying the BOT model

in the Palestinian infrastructure due to the specialization variable on the total score and all dimensions, where the level of significance for the values (T) is greater than (0.05) herein it accepts the null hypothesis.

5.3.8 Persuasion variable:

The sample members were asked: Are you convinced that it is appropriate to adopt BOT strategy in water and energy sectors in Palestine? Answers for this question were as shown in table 37:

Table (37): results of the question: Are you convinced that it is appropriate to adopt BOT strategy

	Govt. officials	Businessmen	Total
Yes	83.6%	87.3%	85.4%
No	16.4%	12.7%	14.6%

Table 37 shows that 85.4 % of the sample members are convinced that the adoption of BOT strategy in water and energy sectors in Palestine is a good choice. Such results show the level of possible support to this strategy when adopted.

To answer the question: Are there any statistically significant differences at the significance level ($\alpha = 0.05$) in the obstacles to the adoption of the BOT strategy in Water and Energy sectors in Palestine attributed to the persuasion variable? T. Test was adopted; results are as appearing in table (38):

Table (38): t. Test results of significance attributed to persuasion

		Yes/ No	Counts	Mean	St. Dev.	T	Sign.
Government officials (water& energy)	Legal	Yes	158	3.8510	.67504	3.238	.003
		No	23	3.3874	.63649		
	Administrative	Yes	158	3.8996	.52524	2.733	.010
		No	23	3.6145	.45835		
	Financial	Yes	158	3.7848	.50666	2.079	.044
		No	23	3.6245	.31528		
	Political	Yes	158	3.9756	.54516	.481	.633
		No	23	3.9379	.31306		
	Social	Yes	158	3.8139	.60280	3.485	.001
		No	23	3.5565	.26939		
	Technical	Yes	158	3.7310	.61640	1.754	.089
		No	23	3.5145	.54336		
		Yes	158	3.8426	.47940		
Busin essme n	Total	No	23	3.6059	.22982	3.866	.000
		Yes/ no	Counts	Mean	St. dev.	T	Sign.
Busin essme n	Legal	Yes	163	3.8048	.63934	- 1.260-	.214
		No	32	3.9716	.69290		
	Administrative	Yes	163	3.8368	.57940	-.749-	.457
		No	32	3.9021	.42095		
	Financial	Yes	163	3.7864	.60795	-.430-	.669
		No	32	3.8324	.54158		
	Political	Yes	163	3.9869	.81847	.813	.419
		No	32	3.8929	.54429		
	Social	Yes	163	3.7656	.62681	-.317-	.753
		No	32	3.8000	.54713		
	Technical	Yes	163	3.6840	.60847	- 1.222-	.227
		No	32	3.8073	.50288		
		Yes	163	3.8108	.48473		
	Total	No	32	3.8677	.40135	-.708-	.482

Statistically significant at significance level (0.05)

Table 38 shows that there are no statistically significant differences at the level of significance ($\alpha = .05$) in the obstacles of adopting BOT strategy in water and energy sectors in Palestine from the businessmen point of view attributed to the persuasion variable.

The table also shows that: there are statistically significant differences at the level of significance ($\alpha = .05$) of adopting and implementing BOT model in water and energy sectors in Palestine from the government employees point of view attributed to the persuasion variable on the total score. Differences appeared on legal, administrative, financial and social categories in favor of yes answers.

The researcher stressed that the positive vision of public sector employees regarding the partnership with the BOT strategy in the infrastructure that there is a real need for partnership in the water and energy projects, which contribute to the development of water network projects and generation power stations, which is a key element in the comprehensive development. The results showed that the respondents with a higher level of belief in BOT projects had a higher awareness of legal obstacles. This is because of the conviction that partnership projects may be beneficial to the Palestinian situation, they face the legal challenge of the activities, instructions and evidence of the immature partnership due to the absence of legislative authority. On the other hand, the awareness of the legal obstacles to a lesser extent may have other experiences that make partnership an inappropriate option of the Palestinian situation.

Table (39): t. Test results of significance attributed to persuasion (overall)

		Yes/ No	Coun ts	Mean	St. Dev.	T	Sign.
Government officials (water& energy) & busines smen	Legal	Yes	222	3.8382	.67039	.172	.864
		No	38	3.8158	.75662		
	Administrative	Yes	222	3.8781	.57670	.714	.478
		No	38	3.8158	.48210		
	Financial	Yes	222	3.7985	.57234	-.006-	.995
		No	38	3.7990	.50689		
	Political	Yes	222	3.9878	.75991	1.268	.209
		No	38	3.8647	.50910		
	Social	Yes	222	3.8081	.62910	.480	.633
		No	38	3.7632	.51540		
	Technical	Yes	222	3.0766	.51439	-.485-	.630
		No	38	3.1140	.42643		
	Total	Yes	222	3.7312	.47660	.504	.616
		No	38	3.6954	.39088		

Statistically significant at significance level (0.05)

The table (39) shows that: there are no statistically significant differences at the level of significance ($\alpha = 0.05$) in the obstacles of adopting BOT model in the Palestinian infrastructure due to the persuasion variable on the total score and all dimensions'. where the significance level of the values of (T) is higher than ($\alpha = 0.05$) Thus it accepts the null hypothesis.

Chapter six

Conclusion and recommendations

Chapter six

Conclusion and recommendations

6.1 Overview

This chapter covered the main recommendations, conclusion, future work and limitations of the study.

6.2 conclusions

It observed that BOT strategy is one of the most popular strategies for the various government mainly those in the third world country; this strategy is mostly used in implementing projects related to public infrastructure where enormous funds are needed to enable the government to implement such projects. However, with the existence of financial deficit and the high demand on implementing project that maintain public services, this became possible with BOT strategy, it is a partnership between the public and private sector as the private sector invests the money in implementing projects and retains the money after the operation of these projects.

The private sector is therefore given the right to operate this facility and collect the fees in exchange with services provided to the public and after the certain period of the time as agreed in the contract between the government and the investor, the ownership is referred to the government within the condition spited in the contract.

This description donates the stages of BOT strategy adoption. It will prove that the strategy results in huge volume of benefits to all parties concerned

(government, investor, and public). This strategy enables the government to focus on other priority issues besides solving its financial efficiency. It also enables utilizing updated technology in providing services to the public.

From the economic point of view BOT strategy helps solving the unemployment problem and share the financial risks with the private sector. Those benefits are a simple example of the total benefits. However, this does not mean that the BOT strategy is free of risks. For instance, the concessioner period given to investor might help the private sector to exploit public money (whether the money was the government's or the citizen's).

There are many risks and obstacles encompassing the adoption of BOT strategy. They might be classified into (legal, administrative, financial, political, social and technical). Some of those obstacles appear in the initial stage while others appear in the construction stage or operation stage up to the transfer of the property to the government.

In conclusion the adaption of BOT strategy in water and energy sector in Palestine requires tentative effort to provide convenient environment (legally, administratively, financially, politically, socially and technically) aspects.

- this research aims to study and assess the major obstacles facing the implementation of Build-Operate-Transfer (BOT) model in Palestinian Infrastructure of water and energy sector , also to examine the benefits of adopting BOT projects in Palestine, and identify the legal, financial , administrative, financial, social and

technical obstacles that impede the application of BOT contracts in the water sector and energy, and how can they be solved, and also to make a formulation of a suitable model for BOT contracts in Palestine.

- This research was formulated via reviewing related literature. The research tools consisted of qualitative and quantitative method. The questionnaire was the quantitative tool, whereas the qualitative was conducting interviews with the Decision-makers in the Energy and Water Authority. Qualitative data was analyzed by SPSS program to generate descriptive required and to test number of related hypothesis. The quantitative data was analyzed using the thematic analysis approach.
- The questionnaire consisted of four parts as follows:
 - Demographic or general information's.
 - Legal obstacles.
 - Management obstacles.
 - Financial obstacles.
 - Social obstacles.
 - Technical obstacles.
- This research answered many questions. The main one was, what are the obstacles for implementing BOT model in Palestinian infrastructure in the water and energy sector? And this question was discussed in the following question, what are the legal, financial, administrative, financial, social and the technical obstacles that

impede the application of BOT contracts in the water and energy sector and how can they be solved? In addition, there are seven tested hypotheses.

- The level of influence of all the six categories of obstacles was high with an average mean 3.815. The arithmetical means varieties from 3.70 up to 3.97, high level of influence to all the categories. The political obstacles scored the highest among all categories with a mean 3.97, while the technical obstacles scored the lowest with mean 3.70.
- The level of influence of the legal obstacle on the adoption of BOT strategy in water and energy sectors in Palestine reveals that the average mean of this category of obstacles is 3.81. This donates that the influence of those obstacles is high. Obstacles: The Absence of the role of the Legislative Council in passing laws for BOT adoption scored very high. Both parties agree on the level of influence and ranking these categories of obstacles.
- The level of influence of the administrative obstacles on the adoption of BOT strategy in water and energy sectors in Palestine is close to each other with means 3.86 and 3.76. item which scored high level of influence was: “Poor coordination mechanisms between the government and investor” with a mean 3.93. But they disagree with each other about the ranking.
- The level of influence of the financial obstacles on the adoption of BOT strategy in water and energy sectors in Palestine is high. The

highest among them was: Some Parties are not convinced that BOT strategy leads to cost reduction with means 4.12. Both parties' focus on the returns of the investments as well as their shared vision of an investment opportunity.

- The level of influence of the political obstacles on the adoption of BOT strategy in water and energy sectors in Palestine that their rating to the political obstacles appears closer means 3.97. Both parties agree on the lowest influencing obstacle which is: “Subsequent governments can deny the obligations of the previous government” described as median level influence.
- The level of influence of the social obstacles on the adoption of BOT strategy in water and energy sectors in Palestine is close to each other with means 3.77 and 3.78. The highest among them is: “Absence or weak guarantees regarding public misuse of BOT facilities” with a mean 3.995. Even they agree with each other on the level of influence of the list of social obstacle.
- The level of influence of the technical obstacle on the adoption of BOT strategy in water and energy sectors in Palestine reveal that their rating to the technical obstacles appears the same means 3.70. Both parties agree that: “the absence of standards governing the expected performance specifications” is the highest technical obstacle, and “lack of experience with the contractor and investors” is the weakest among them.

- The political obstacles are the most dominant factors. The occupation and its practices are the central impediments among the others. Results of other researches show the same conclusion. Thus it becomes imperative that without the solution of this issue many aspects of the Palestinian will remain miserable.
- There are no statistically significant differences at the significance level ($\alpha = 0.05$) in the obstacles to the adoption of the BOT strategy in Water and Energy sectors in Palestine attributed to the following variables: gender, age group, institutional reference, functional status, years Experience, qualification, specialization, and persuasion

6.3 Recommendations

Based on the results and conclusion of the present study, below are some recommendations to insure that BOT strategy is implemented successfully in water and energy sector in Palestine with least level of risks on all parties concerned:

Recommendations for the Public Sector (Government)

1. With reference to the result that the influence of administrative obstacles is high, the study recommended:
 - Establishing special unit in the pri ministries office to deal with BOT adoption strategy affairs. This unit should be responsible for coordinating BOT strategy adoption in project with the various ministers.

The government must develop a BOT guide that deals with all the details and specifications of BOT strategies and learn from the experience of other countries in preparing such a guide. This appears in paragraph 1 and 2 Of the preliminary and administrative environment for all stages of the project in the proposed model.

- Establishing a legal framework to adopt the BOT strategy within the framework of the partnership approach, setting out rules, procedures and rules of adopting BOT strategy in order to build attractive opportunities for investors
2. With reference to the result that the influence of social obstacles is high, the study recommended to enhance the culture of partnership through conferences, training, workshops and public awareness by promoting dialogue with eligible economic sectors to enter into a BOT-style partnership and showing the gains that can be made to the private sector from entering into such contracts. The chambers of commerce hold workshops to deepen the understanding of the private sector in various forms of partnership and contracts, including the BOT contract. This appears in the paragraph 3 of the preliminary paragraph 1 and 2 of the social environment in the proposed model.
 3. With reference to the result that the influence of technical obstacles is high, the study recommended to establish the technical frame of the standard and indicators for each and every BOT contract. This

appears in the paragraph 2 of the preliminary environment and all stages of the project in the proposed model.

4. With reference to the result that the influence of financial obstacles is high, the study recommended that the government should encourage financial institutions to adopt a financial vision related to the financing of BOT projects, such as the government being the guarantor of investors. This appears in the financial area in all stages of the project in the proposed model.
5. With reference to the result that the influence of political obstacles is high, the study recommended the need to involve representatives of the private sector in the final status negotiations in order to express its needs and interests that could be affected by any peace agreement and how the Coordinating Council would choose a member to be part of the negotiating team.

This appears in the paragraph 1, 2 and 3 of administrative environment in the proposed model.

6. Develop and strengthen the communication between the two sectors in the field of BOT through activating the role of the coordination council between the public and private sectors and include new partners related to the water and electricity sectors
7. With reference to the result that the influence of legal obstacles is high, the study recommended that there is an urgent need to establish a legal framework for BOT adaption which consists of role and regulation for the adaption of BOT strategy in order to built

attractive opportunities for investors. This appears in the paragraph 5 of the preliminary environment and in the legal area of each project stages in the proposed model.

Recommendations for the private Sector

1. The private sector, represented by the Coordination Council, shall open channels of communication with the relevant ministries, through which the private sector's capabilities, and the financial and human resources necessary to enter into such partnerships, based on the BOT
2. The private sector represented by the Coordinating Council shall open channels of communication with the Monetary Authority and the local and national banks in order to obtain financial mechanisms to finance BOT projects that guarantee the rights of all related parties
3. Those wishing to enter into private sector BOT partnerships in coordination with the Partnership Unit of the Council of Ministers should provide a comprehensive and viable vision related to similar Arab experiences in order to encourage the public sector to move towards this type of partnership. This vision illustrates all the potentials of the private sector that qualify for entry into BOT projects.

Future studies

Future studies on BOT projects include finance sector such as banks, financial institutions and the community (end user)

The outcomes of this study:

Building a modal to overcome the implementation obstacles of the BOT project in the Palestinian infrastructure: The sectors of water networks and power stations which were given a full chapter to study its inputs, outputs and the results of its application on the Palestinian situation as following in Figure (10):

*Preliminary Environment***Political**

- *A stable and secure investment environment
- *Investment concessions in area c
- *The Palestinian Authority has adopted encouraging policies to invest in areas under Israeli control
- *Involvement of representatives from the private sector in final solution negotiations

Social

- *Raising awareness among the Palestinian society about the BOT culture
- *Promote a culture of partnership and BOT features by enhancing public-private trust through dialogue.

- Establish special bodies that are qualified to deal with the BOT strategy in the relevant ministries
- Establishment of a partnership council, which will include technical departments and committees with the task of feasibility studies, financial analysis, net present worth, internal rate of return, structure of funding, review of financial conditions and revenues, which consists of relevant ministries and representatives of the private sector.
- Training, workshops, conferences, publications and spread successful experiences
- Open a serious and effective dialogue with the public and private sector, which constitutes a draft partnership law
- The development of an investment assistant law specifying the procedures and conditions for the entry of foreign investors
- finding investment opportunities in the energy and water sector for the private sector

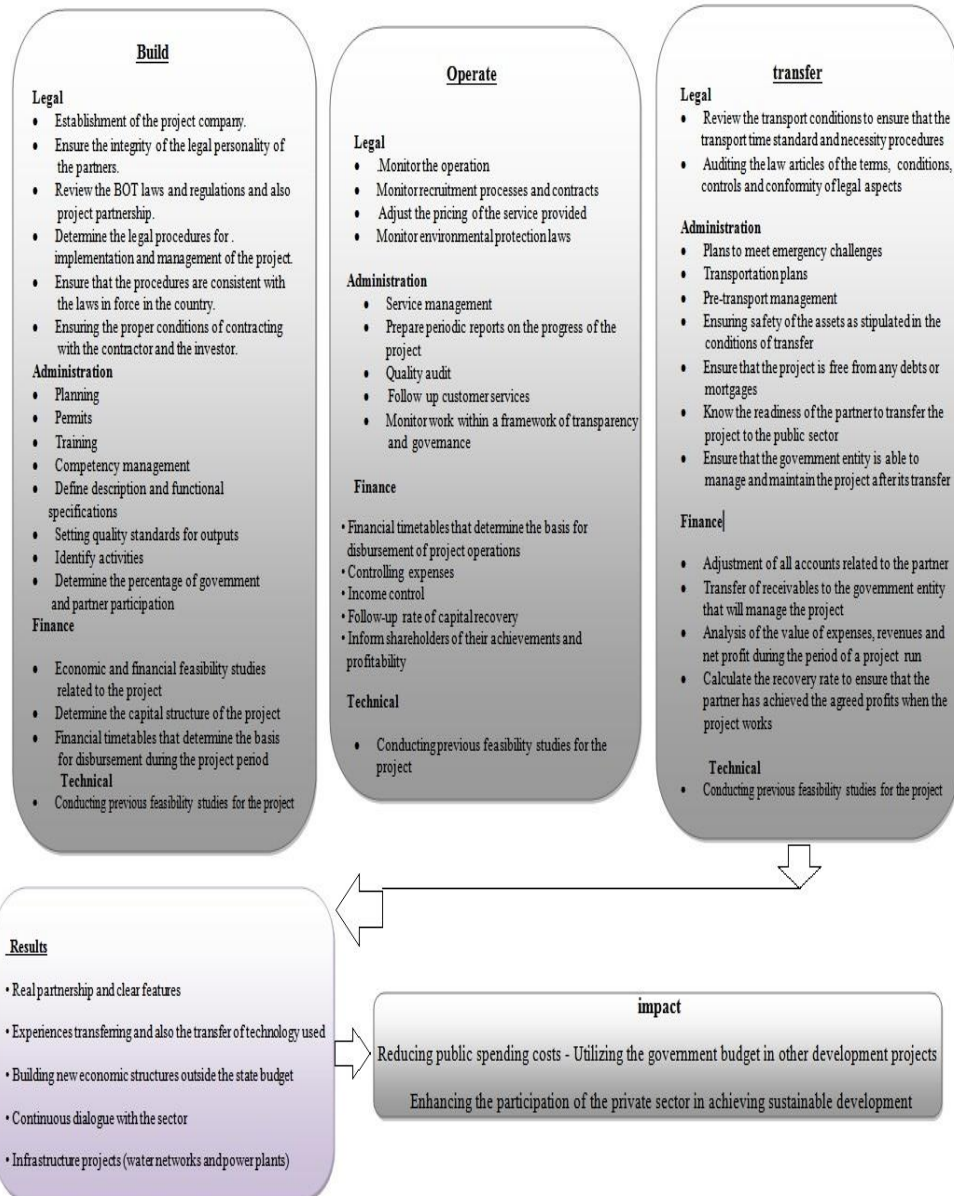


Figure (10): modal to overcome the implementation obstacles of the BOT project in the Palestinian infrastructure: The sectors of water networks and power stations (built by the researcher)

The proposed model consists of the general environment, which includes the political and social environment and then the preliminary environment. The project environment, which includes the construction stage, the operation stage and the transfer stage. The model also includes the expected results after the completion of the last stage of the project, and then the impact of the project on the Palestinian public sector.

General Environment:

It includes

1. The political: A stable and secure investment environment, investment concessions in area c. The Palestinian Authority has adopted encouraging policies, to invest in areas under Israeli control, involvement of representatives from the private sector in the final solution negotiations.
2. Social environment: Raising awareness among the Palestinian society about the BOT culture, promote a culture of partnership and BOT features by enhancing public-private trust through dialogue.

Followed by a preliminary environment based on:

Establish special bodies that are qualified to deal with the BOT strategy in the relevant ministries, establishment of a partnership council, which will include technical departments and committees with the task of feasibility studies, financial analysis, net present worth, internal rate of return, structure of funding, review of financial conditions and revenues, which

consists of relevant ministries and representatives of the private sector. Training, workshops, conferences, publications and spread successful experiences. Open a serious and effective dialogue with the public and private sector, which will result in drafting partnership law. The development of an investment aiding law specifying the procedures and conditions for the entry of foreign investors, and finding investment opportunities in the energy and water sector for the private sector

We move on to the **project phase**, which is divided into three stages: "Build-Operate and Transfer of Ownership", which included the following stages:

1. Construction stage:

Legal include Establishment of the project company, Ensure the integrity of the legal personality of the partners, Review the BOT laws and regulations and also project partnership, Determine the legal procedures for implementation and management of the project, Ensure that the procedures are consistent with the laws in force in the country, Ensuring the proper conditions of contracting with the contractor and the investor

Management includes planning, obtaining permits, training, and competency management. Define description and functional specifications, setting quality standards for outputs, identify activities, determine the percentage of government and partner participation

Finance includes Economic and financial feasibility studies related to the project. Determine the capital structure of the project, and financial

timetables that determine the basis for disbursement during the project period

Technical include conducting previous feasibility studies for the project

2. Operation stage:

The legal factor includes monitor the operation, Monitor recruitment processes and contracts. Adjust the pricing of the service provided and monitor environmental protection laws

The management factor includes service management, prepare periodic reports on the progress of the project, quality audit, follow up customer services, and Monitor work within a framework of transparency and governance.

The financial factor includes Financial timetables that determine the basis for disbursement of project operations, **controlling** expenses, income control, follow-up rate of capital recovery and inform shareholders of their achievements and profitability.

The Technical Factor Determines standards that govern expected performance specifications

3. Transfer stage:

The Legal factor includes review the transport conditions to ensure that the transport time standard and necessity procedures and auditing the law articles of the terms, conditions, controls and conformity of legal aspects.

The management factor includes plans to meet emergency challenges, transportation plans, pre-transport management, ensuring safety of the

assets as stipulated in the conditions of transfer. Ensure that the project is free from any debts or mortgages, know the readiness of the partner to transfer the project to the public sector and ensure that the government entity is able to manage and maintain the project after its transfer.

The Financial factor includes adjustment of all accounts related to the partner, transfer of receivables to the government entity that will manage the project, analysis of the value of expenses, revenues and net profit during the period of a project run and Calculate the recovery rate to ensure that the partner has achieved the agreed profits when the project works.

The technical factor includes enhanced resource efficiency.

The model shows the **expected results** after the implementation of the project, which is thus:

Results: Real partnership and clear features, experiences transferring and also the transfer of technology used, building new economic structures outside the state budget, continuous dialogue with the sector, infrastructure projects (water networks and power plants)

The impact of the application on the Palestinian public sector shows as follows:

Impact: Reducing public spending costs - Utilizing the government budget in other development projects, enhancing the participation of the private sector in achieving sustainable development.

Reference

- Abd EL-Razak. Kh & Shuaib. B. (2010) "***The Role of the Private Sector in the Economic Development of Developing Countries - Case Study of Algeria***". **Researcher Journal**, No. 07, University of Qasdi Marbah Borgla, Algeria.
- Abdel Aziz, Samir Mohamed, Ismail, Ismail Hussein., Ashmawi, Shukri Rajab. (2007). ***Building Operation- Transfer ownership BOT System for Financing, Management and Modernization of Infrastructure Projects***, AL- Dar Eljamia for Publishing, Alexandria, Egypt, p. 37.
- Abdel Razek and Makhoul (2001) ***The impact of the Israeli siege on the Palestinian economy during the period 23/9/2000-30/6/2001***, mas, p.80.
- Abdul Azim. H. (2001). ***Features of Economic Feasibility Studies for BOT Projects***, Sadat Academy for Administrative Sciences, Administrative Research Center, p. 115
- Abu al-Enein, M. (2000). ***Developing Countries' Experiences in BOT Projects***, Research Presented at the BOT Revolution Symposium and the Attractiveness of Investment Opportunities in the Egyptian Economy, **Research and Studies Center of Foreign Trade**, Helwan University, pp. 10-11
- Abu Al-Qomsan, Kh. (2005). ***An Analytical Study for Palestinian economy reality and the Challenges of the Future***, presented a Paper work to the First Scientific Conference, Investment and Finance in Palestine, between Development Prospects and Contemporary

Challenges, held at the Faculty of Commerce, **Islamic University**, May 8-9, Ministry of Finance- Gaza - Palestine

- Abu Bakar, N., Bokharey, S.K., Vallyutham, K., Potty, N.S. (2010). ***Risks and Mitigation Measures in Build- Operate-Transfer Projects.*** International Journal of Civil, Environmental, Structural, Construction and Architectural Engineering Vol:4, No:3, p85-86.
- Abu El-Ola, T. (2007). **BOT Contracts a Comparative Applied Study on privilege Projects**, Egypt: Dar Al Nahda.
- Abu Gouda, Abd El- Sattar (2009). ***construction contract operates and Redo (B.O.T) and apply it in the reconstruction of endowments and public facilities.*** paper submitted to the OIC-Islamic Fiqh, nineteenth session held in Shariqah, U.A.E.
- Abu Jouda, E. (2011) "***Sustainable Development and its Social, Economic and Environmental Dimensions***". Lebanese National Defense newspaper, No. 78.
- ACAR, M.C. (2006). ***The Build-Operate-Transfer Model in the Production of Public Buildings – Sampling of Aerodrome Terminal Buildings.*** Gazi University Institute of Natural Sciences Main Scientific Branch of Architecture, p127.
- Agha, W. H & Abu-jameh, N. H. (2010). ***Development Strategy in Palestine.*** Journal of Al-Azhar University, Gaza, Human Sciences Series, Volume 12, No. 1, pp. 467-510

- Ahmed, F.M.S., Miroslaw, J.S., and Ismail, B. (2007). ***BOT viability models for large scale infrastructure projects***. **Journal of Construction Engineering and Management**, pp 50-63, ASCE
- Al Yousuf. Kh. (2001) "***The Prospects of Specialism in the UAE***". **Journal of Social Sciences**, Volume 25, Issue 4, p. 1
- Aladdin. F. (2002). "***Customization***". **Arab Journal of Chartered Accountant**, Issue 81, October, p. 14
- Alagarma, novanAgil (2013). ***build-operate-transfer contract property for B.O.T and its applications in the Jordanian legal system***. scientific research, **studies of Sharia and law**, volume 40, appendix (1), **University of Jordan**, Oman, Jordan.
- Alhamoud, W. (2010). "**Build – Operate- Transfer (BOT) contracts- The rights and of the contracting administration and its commitments**". Dar Al-Thaqafa for Publishing and Distribution, First Edition, p. 12
- Ali. S. (2001). ***Feasibility Study of Projects between Theory and Practice***, Al- Dar El- Jamiah, Alexandria, Chapter 5, p. 76
- aljmal, I. (2003). ***Engineering and Technical Aspects of B.O.T Projects***, a research submitted to **the Investment Conference in Sudan according to B.O.T Contracts**, Khartoum, p.7
- Allen, G. (2001). ***The Private Finance Initiative (PFI)***, economic policy and statistics section, house of commons library, research paper 01/117, 18 december, p10

- Alqumsan, khaled (2005). *An analytical study of the reality of the Palestinian Economy Between investment opportunities and challenges of the future*. gaza, Palestine, research paper, p.18.
- Ameln, R.V. (2011). *PPP Contractual Forms and Schemes of its Fulfillment*, Workshop on Private Public Partnership, **Federal Association of German municipal insurance**, 24 June, p25.
- American Society of Civil Engineers (ASCE). (2014). *Incentivizing Expanded Use of Private Capital in Transportation Infrastructure*. university of Denver, p2
- Andreas, W. (2004). *Valuing guarantees in a BOT infrastructure project*. **Journal of Engineering Construction and Architectural Management**, Volume 11, No. 6, pp. 395-403, Emerald Group Publishing Limited.
- Andrew D. (2006). *BOO & BOT Approaches to privatization*, **international privatization group**, price water house, USA, p8.
- Antonio, L., and Miroslaw, J.S. (2007). *"Technology Transfer in BOT Projects"*. Proceedings of ASCE Construction Research Congress: **The Global Construction Community**, May 6-8, 2007, Grand Bahama Island
- Apostolakis, C., and Smith, LR. (2002). *Sustainable co-operation: an essential tool for regional development in Australia and the UK?* in L Montanheiro, S Berger & G Skomsoy (eds), *Public and Private Sector Partnerships: Exploring Co-operation*, **international management journal**, Sheffield Hallam University Press, Sheffield, pp. 87-105.

- Argyris G. Kagiannas, K. D. (2003) ***The role of Build Operate Transfer in promoting***, Decision Support Systems Lab (EPU-NTUA), **National Technical University of Athens**.
- ***Article 4 of the Law on the functions of the Energy Authority states*** that the latter "shall issue permits, licenses and privileges for any type of use of water or disposal of sewage" **Palestinian Chronicle**, No. 11 of 11/2/1996, p. 36
- Askar, M. M., and Gab-Allah, A. A. (2002). ***Problems facing parties involved in build, operate, and transport projects in Egypt***. J. Manage. Eng, 184, 173–178
- Askar, M.M. and Gab-Allah, A.A. (2002). ***Problems facing Parties Involved in Build, Operate, and Transfer Projects in Egypt***. Journal of Management in Engineering Vol. 18, No. 4.
- Atman. S. (2006). ***Feasibility studies of projects and BOT projects between theory and practice***, Al- Dar Al- Jamiah, Alexandria University, Egypt, pp. 565-572
- Attieh. M. (2001). ***Business, economic and social feasibility studies with BOT projects***. Faculty of Commerce, Alexandria, I 1, pp. 631-668
- Aziz, F. K. (2013). ***The Impact of Political Instability on Economic Development***, Journal of the Professor, No. 207, Volume 2.
- Bahaji, E. A. (2008). ***BOT contracts, road to build, Modern State Facilities***, Egypt, Alexandria: New University House
- Barghouti, B. (2009). ***legislative policies in Palestine and the trend towards partnership between the public and private sectors: reality***

and perspective. local democratic reform program - **Twasa- CHF International.**

- Barnier, M. (2003). **Guidelines for Successful Public-Private Partnerships.** European commission Directorate-General Regional Policy
- Beydoun, A. (2000). *Infrastructure development and operation in Palestine*, the Palestinian Employment program - **the International Labor Organization**, p. 3.
- Bing Li, A. Akintoye, P.J. Edwards, C. Hardcastle (2005). *Perceptions of positive and negative factors influencing the attractiveness of PPP/PFI procurement for construction projects in the UK: Findings from a questionnaire survey Engineering.* Construction and Architectural Management, 12(2), p.p 25 – 148.
- Boggetti, G. and Robotti, L. (2007). *The Provision of Local Public Services Through Mixed Enterprises: The Italian Case.* Annals of Public and Cooperative Economics, Vol. 78, No. 3; 415-437.
- Bouachek, A. (2009). *Public-Private Partnership: Modern Public Policy for Financing Sustainable Development in Morocco*, International Conference on Administrative Development, towards a Distinguished Performance in the Government Sector, Riyadh, 1-4 November, Rabat, Morocco
- Carrillo, P., Robinson, H., Foale, P., Anumba, C., Bouchlaghem, D. (2008). *Participation, barriers and opportunities in PFI: The United Kingdom experience.* J. Manage. Eng., 24(3), 138–145

- Chan, 2006, Grimsey and Lewis 2004, Li 2003, Li et al. 2005, Merna and Owen 1998, Mustafa 1999, Zhang 2001. **Environment, Transport and Works Bureau**. Reference guide on selection of procurement approach and project delivery techniques. Technical Circular No. 32/2004, Hong Kong Special Administrative Region Government, Hong Kong.
- Chan, D. W. M., Chan, A. P. C., and Lam, P. T. I. (2006). *A feasibility study of the implementation of public private partnership PPP in Hong Kong*. Proc., CIB W89 Int. Conf. on Building Education and Research: 2.6—Procurement Management, **CIB, Hong Kong**.
- Chen, Ch. (2010), *The institutional challenges for PPP in China and the role of PPIAF*, School of Government, Sun Yat-sen University, China, Paper prepared for the **World Bank Post-Doctoral Workshop**.
- Chinyere, I. (2013). *Comprehensive Objectives for PPP Projects: Case of Beijing Olympic Stadium*, Published by Canadian Center of Science and Education, **International Journal of Business and Management**; Vol. 8, No. 9.
- Chong, Eshien, Huet, Freddy, Saussier, Stéphane and Steiner, Faye (2006). *Public-Private Partnerships and Prices: Evidence from Water Distribution in France*. Review of Industrial Organization, 29, (1-2), p. p149-169.
- Cidb-construction industry development board (.2005). **The Supply Contract**. 2nd Edition September, CIDB document 1021, the Institution of Civil Engineers, London, p41.

- Corbett, P., and Smith, R. (2006). ***An analysis of the success of the private finance initiative as the government's preferred procurement route.*** Proc., Accelerating Excellence in the Built Environment Conf., World Conference Series on Accelerating Excellence in the Built Environment WCAEBE, Birmingham, U.K.
- Cotula, L. (2007). ***Foreign investment contracts,*** International Institute for Environment and Development, Strengthening Citizens' Oversight of Foreign Investment, Investment Law and Sustainable Development, SUSTAINABLE MARKETS INVESTMENT BRIEFINGS, BRIEFING 4, p1
- Dallas, M.F. (2006). ***Value and risk management: A guide to best practice.*** Blackwell Publishing, Singapore.
- Dante B. Canlas, Gilbert Llanto, Atty. Domingo C. Palarca, Atty. Rean Botha, and Rowena M. Cham. (2006). ***A Proposed BOT Bill to Enhance Public-Private Partnership in Infrastructure Development,*** USAID/Philippines OEDG, June 1, pp.3-22
- Delmon, J. (2005). ***Project Finance, BOT Projects and Risk,*** kluwer law international. book, p.73
- Delmon, J. (2009). ***Private Sector Investment in Infrastructure: Project Finance, PPP,*** second edition, Kluwer Law International , p99
- Donaghue, B. (2002). ***Statistical Treatment of Build-Own- Operate- Transfer Schemes,*** international monetary fund, p3.
- EBRD Annual Meeting. (2010). ***Building the legal Environmental for PPP Business Forum.***

- **Economic Coordination Committee -ECC. (2010). *PAKISTAN POLICY ON PUBLIC PRIVATE PARTNERSHIPS*, Private Participation in Infrastructure for Better Public Services, Approved by the Economic Coordination Committee of the Cabinet, January 26, p2**
- Eduardo Engel, Ronald Fischer and Alexander Galetovic (2011). ***THE BASIC PUBLIC FINANCE OF PUBLIC-PRIVATE PARTNERSHIPS. COWLES FOUNDATION FOR RESEARCH IN ECONOMICS, YALE UNIVERSITY.***
- El-Gohary, N. M., Osman, H., and El-Diraby, T. E. (2006). ***Stakeholder management for public private partnerships. Int. J. Proj. Manage,*** 24(7), 595–604.
- Energy and Natural Resources Authority
website:<http://www.penra.gov.ps/>
- Engel, E., Fischer, A., Galetovic, A. (2007). ***The Basic Public Finance of Public-Private Partnerships, ECONOMIC GROWTH CENTER, YALE UNIVERSITY, CENTER DISCUSSION PAPER NO. 957, p22***
- **ERIA Interim Report. (2007). *Developing a Roadmap toward East Asian Economic Integration.* July 19.**
- Eventia, R.C. (2017). ***LEGAL PRINCIPLES IN FUNCTION AND PERFORMANCE OF BOT CONTRACT, Yuridika: Volume 32 No. 3, September 2017, p534***

- F. Lokiec, and G. Kronenberg. (2001). *Emerging Role of BOOT Desalination Projects. Desalination, The International Journal on the Science and Technology of Desalting and Water Purification*, Vol. 136, issues 1-3.
- F. Lokiec, R. Meerovitch. (2013). *implementation of build-operate-transfer schemes: Obstacles & solutions*, The International Desalination Association World Congress on Desalination and Water Reuse / Tianjin, China, The International Desalination Association (IDA), World Congress on Desalination and Water Reuse, REF: IDAWC/TIAN13, p4
- FEMIP. (2011). EIB -*Study in PPP Legal & Financial Frameworks in the Mediterranean Partner Countries* ‘European Investment Bank Volume 2 – May 2011, p32
- Fillippoizzi, E.M., Paulo, S. (2005). **Public-private partnerships in Brazil: legal guide** – Observatory legal, p7.
- Florence, Y.Y.L., and Linda, H. (2006). *Risks faced by Singapore firms when undertaking construction projects in India.*” *International Journal of Project Management*, 24(3), p. 261-270.
- Francoz, E. (2010). *Advantages & Limitations of the different Public Private Partnership Risks*, *Public Private Partnership Workshop*, Jordan, p13-14
- Gerenzia, J. (2000). *Establishing Sustainable Private Infrastructure in Emerging Market*, *Journal of finance*.v.5. no2, pp53-63.

- Ghanem, A. (2009). *sectoral partnerships in the delivery of public services and municipal- local organization level*. Local-democratic reform program continues, **international CHF**.
- Gilberto M. Llanto (2008). **Build-Operate-Transfer for Infrastructure Development: Lessons from the Philippine Experience**. Philippine Institute for Development Studies.
- **Government of Dubai** (2010). *Public Sector Partnership (Government) and the Private Sector*, Department of Economic and Financial Studies, Department of Finance, Dubai, April, p. 4.
- Grimsey, D., and Lewis, M. K. (2004). **Public private partnerships: The worldwide revolution in infrastructure provision and project finance**, Edward Elgar, Cheltenham, U.K.
- Haarhoff, K.J. (2008). **Public-Private Partnerships as an Alternative Service Delivery Option: A Multiple Case Study of the Health Care Sector in South Africa**, Master Thesis in Public Administration, University of Stellenbosch
- Hamada, H.A. R. (2014). **PPP Partnership contracts**, Egypt: Dar EL Jmmah EL Jadida.
- Hasayem, S. (2011). **"BOT Contracts: A Framework for Receiving the Private Sector in Infrastructure Projects"**, Unpublished Master Thesis, Faculty of Law, Mouloud Mameri University, Algeria, p. 10
- Hasbo, A. A. (2009). **Modern development of commitment public utility contracts according to the BOT system**. Comparative Study, Egypt: Aldar EL-jamia Aljadida.

- Hassan, N. Ali (2009). ***a system of build-operate-transfer BOT***. paper submitted to the **OIC**, Islamic Fiqh, nineteenth session held in Shariqah, U.A.E.
- Hassani, A.H(2007). **Economic Legitimacy Study for the Privatization of Infrastructure Projects in a Method of Construction and Operation and then Restructuring BOT**, Saudi Arabia Umm Al - Qura University: 2007
- **<http://www.pwa.ps/index.aspx>**
- Hussein, M. A. (2011). **BOT's contracts, the concept, characteristics and some application problems**, Website:<http://www.startimes.com/?t=26674371>
- İmre, E. (2001). **"Build- Operate- Transfer (BOT) model in Turkey, Legal framework and application"**, Supreme Supervisory Authority, Supreme Audit Council, p. 34
- INTOSAI Environmental Review Working Group (**WGEA**) (2013). ***Environmental Issues Related to Infrastructure Development***, p9
- Iossa, E., and et. al. (2007). ***Contract Design in Public- Private Partnerships***, Report prepared for the **World Bank**, Final Version September 2007
- İrem, D.O., and Talat M.B. (2000). ***A decision support framework for project sponsors in the planning stage of build-operate-transfer (BOT) projects***. **Journal of Construction Management and Economics**, Volume 18, pp 343-353, Taylor & Francis Limited.

- Jalal, A. (2001). *Evaluation of Electricity Sector Reforms in Some Arab Countries - Sector Reform or BOT Projects*, Banking Center for Economic Studies, Paper Work No. 63.
- Jalaluddin Shah, M. (2001). **Build, Operate and Transfer (BOT) - Project Delivery System in Saudi Arabia** (Thesis), King Fahd University of Petroleum and Minerals College of Industrial Management, Construction Management CEM – 520, p9
- Jeong, J., Ji, C., Hong, T., and Park, H. (2016). *Model for Evaluating the Financial Viability of the BOT Project for Highway Service Areas in South Korea*. J. Manage. Eng., **Journal of Management in Engineering**, Volume 32, Issue 2.
- Jilali, M. (2010), "**BOT Contracts**", "Western Reproduction of an Islamic Investment Product", PhD thesis, Jilali University of Lybes, Sidi Bel Abbes, Algeria, p.9
- John, E.S., and Isr, W. (2003). *Alternate financing strategies for build operate transfer projects*. **Journal of Construction Engineering and Management**, pp 205-213, ASCE.
- Khalifa, W.H. M. (2009). **the use of cost / benefit in rationalizing investment decisions analyzed in the area of BOT contracts accounting entrance**. Master Thesis, Faculty of Commerce, Banha University.
- Khan, A.H., Jamil, M., and Sattar, M. (2008). *The Trend of Build Operate and Transfer (BOT) Projects in Pakistan*, First International Conference on Construction In Developing Countries (ICCIDC–I)

“Advancing and Integrating Construction Education, Research & Practice” August 4-5, Karachi, Pakistan, p91

- Khanom, N. A. (2010). *Conceptual Issues in Defining Public Private Partnerships (PPPs)*, *International Review of Business Research Papers* Volume 6. Number 2. July 2010, Pp. 150 -163.
- Kumaraswamy, M. Z. (2001). *Governmental Role in BOT-Led Infrastructure Development*, Article in *International Journal of Project Management* 19(4), p.195-205 .
- Lam, P.T.I. (1999). *A sectoral review of risks associated with major infrastructure projects*. *International Journal of Project Management*, Volume 17, No. 2, pp 77-87, Elsevier Science Limited and IMPA.
- Larry, W. (2006). *Design-Build-Operate Project Delivery. Design-Build Dateline*. Mc-Graw Hill, hand book.
- Lashin, A.Q.F. (2010). *Public-Private Partnerships in Transport Infrastructure Projects: Models from Some Arab Countries*, Egypt, Arab Organization for Administrative Development: Research and Studies, p. 13
- **law Establishment of Power Authority No. 12 of 1995, Article 3**
- Li, B. (2003). **Risk management of construction public private partnership projects**. Ph.D. thesis, Glasgow Caledonian Univ., U.K.
- Li, B., Akintoye, A., Edwards, P. J., and Hardcastle, C. (2005). *The allocation of risk in PPP/PFI construction projects in the U.K.* *Int. J. Proj. Manage.*, 23(1), 25–35.

- Llanto, G. (2008). ***Build-Operate-Transfer for Infrastructure Development: Lessons from the Philippine Experience***. in Kumar, N. (ed.), International Infrastructure Development in East Asia – Towards Balanced Regional Development and Integration, **ERIA** Research Project Report 2007-2, Chiba: IDE-JETRO, p.324
- Maaadidi, M& Taei, A. (2012). ***Risks ensuing from Partnership Contracts between Public and Private Sector Organizations***. **Rafidain Development magazine**, appendix No. 109, Volume 34, Mosul, Iraq.
- Malih. Y. (2015) "***Infrastructure in Morocco between the reality of arrangement and ambitions for change***". **Al-Rai Newspaper**, published article. <http://www.raialyoum.com/?p=242618>
- Mas (2005). ***A Critical Study of the Palestinian Privileges Law***, Palestinian Economic Policy Research Institute, p.7
- Mekdad, M. (2009). ***Economic and political development in Palestine in light of the global economic downturn***. Presented a paper work to the conference of international variables and its impact on the **Palestinian issue**, held on 28-3, Department of Economy - Islamic University - Gaza
- Merna, T. and Njiru, C. (2002). ***Financing Infrastructure Projects***. Thomas Telford, London.
- Merna, T., and Owen, N. (1998). ***Understanding the private finance initiative: The new dynamics of project finance***, Asia Law and Practice, Hong Kong.

- Mohammed. M. (2005). **Legal system for construction, operation and the return of ownership contracts**, Dar al-Nahda al-Arabia, p. 31
- Moody. A. (1997). ***Infrastructure in the West Bank and Gaza Strip, Institutions and Growth***, Mas, Ramallah
- Mortimer, M. (2004). ***The Design-Build-Operate Form of Contract (DBO)***, Hawkins New Contracts Seminar, FIDIC 2004 Annual Conference, 16th September, p2
- Mubin, S., and Ghafar, A. (2007). ***“BOT contracts applicability in Pakistan for infrastructure development”***. Proceedings of International Conference Management
- Mubin, S., and Ghafar, A. (2007). ***BOT contracts applicability in Pakistan for infrastructure development***. Proceedings of International Conference Management
- Mullins, Daniel R. and Zorn, C. Kurt, Is (1999). ***Activity-Based Costing up to the Challenge when it comes to Privatization of Local Government Services?*** Public Budgeting & Finance j., Vol. 19, pp. 37-58.
- Mustafa, A. (1999). ***Public-private partnership: An alternative institutional model for implementing the Private Finance Initiative in the provision of transport infrastructure***. J. Project Finance, 5(2), 64–79.
- N.J. Smith. (2003). **Appraisal risk and uncertainty**. Thomas Telford, London.

- Nallathiga, Ramakrishna (2007). *Off-Budget Approaches to the Delivery of Urban Services: The Potential of Public-Private Partnerships*. ICFAI Journal of Public Finance, Vol. 5, No. 2, pp. 53-64.
- Nasr. M. (1997). *Opportunities and Possibilities of Manufacturing in Palestine*. Jerusalem, Mas, p. 91
- Nassif. E. (2011). *International Contracts BOT CONTRACT*, Egypt: Dar El- Jamah AL-Jadida.
- Natur, W. (1999). *Operational Policies and Labor Market Regulation in Palestine*, Director of Planning and Research Department, Ministry of Labor, Palestine, pp. 1-3
- Natur. W. (2000). *Operational Policies and Labor Market Regulation in Palestine*, Director of Planning and Research Department, Ministry of Labor, Palestine, pp. 1-3
- Navarro, A. (2005). *Build-Operate-Transfer (BOT) Arrangements: The Experience and Policy Challenges*, DISCUSSION PAPER SERIES NO.01.
- Nicos X. T. (2008). *Criteria and Procedure for Selecting a Site for a Desalination Plant*”, Desalination, Vol. 221, issues 1-3, March, pp. 114-125.
- Odeh, S. and Ahmed, R. (2008). *the infrastructure of the Palestinian economy*. Institute of management and Economics-School of graduate studies, Al-Quds University, **the Chamber of Commerce and industry**, Ramallah Governorate, bereh, p.2

- **PACIFIC ISLANDS FORUM SECRETARIAT.** (2006). ***PUBLIC PRIVATE PARTNERSHIPS AND BUILD, OPERATE AND TRANSFER (BOT) AND SUCHLIKE SCHEMES***, PACIFIC ISLANDS FORUM SECRETARIAT, FORUM ECONOMIC MINISTERS MEETING, Honiara, Solomon Islands, 03-05 July 2006, p12
- Palestine Real Estate Investment Company, the official **website:** **<https://www.padico.com/en/investment/104.html>**
- **Palestinian Basic Law, 2002, amended in 2003**
- **Palestinian Monetary Authority** (1997). Palestinian Balance of Payments, Third Annual Report, seventh Chapter, 1997, pp. 1-6.
- **PCBS**, Palestinian Central Bureau of Statistics report, 2016
- Perar, E. (2012). ***Ten Years of Water PPPs***, Handshake #1, **IFC Quarterly Journal on PPPs**
- Pérard, E. (2008): ***Private Sector Participation and Regulatory Reform in Water Supply: The Southern Mediterranean Experience***. Paper no. 265, **OECD Development Centre Working Papers**.
- Pongsiri, N. (2002). Regulation ***and public-private partnerships***. **International Journal of Public Sector Management**, Vol. 15 Iss: 6, p338.
- Public-Private Partnership Operational Plan 2012-2020.(2011).**Public-Private Partnership Handbook**, Asian development Bank, 6 ADB Avenue, Mandaluyong City,1550 Metro Manila, Philippines, www.adb.org, Publication Stock No. 071107, p1.

- Quium, A. (2011). **Public-Private Partnership in Infrastructure**, A Guide book, ECONOMIC AND SOCIAL COMMISSION FOR ASIA AND THE PACIFIC, UNESCAP Bangkok.
- Ranasinghe, M. (1999). **Private sector participation in infrastructure projects: a methodology to analyze viability of BOT Construction Management & Economics** .17 (5), p.p 613-623.
- **Report of the Special Coordinator Office for the United Nations** (2000). *Economic and Social Conditions in the West Bank and Gaza*, Office of the Special Coordinator for the United Nations in the Palestinian Territories, 25 October, pp. 18-19.
- Rima, Khateeb (2014). **what is the contract BOT and its practical reality?** master in Law and Administrative Sciences, Faculty of law and political science, Law and Administrative Sciences, University of 8 May 1945, Guelma, Algeria.
- Roulette.A. (2004) *Building, Operation and Transfer System for Construction of Infrastructure Projects*, Civil Engineering Department, University of Damascus, published article, p.12
- Sabri, S. (2015). **Obstacles application systems partnership in the health sector application on the Palestinian situation**, the doctoral thesis, Faculty of economics, science, public administration, University of Cairo.
- Sadran, P. (2004). *The Evolution of Public Personnel Systems in France: Structure and Reforms*, Volume 7 of the series **Urban and Regional Research International** pp 75-87

- Salam, A. (2010). **Construction contract, management and transfer of ownership BOT, In the field of private international relations**, Egypt: Dar al-Nahda al-Arabia.
- Saleh, R.S.A.F. (2006). **Project Finance: Government Financing for Public Projects**, The role of banks in short- and long-term financing, Project Finance, Characteristics and Components A descriptive study on the financing of BOT projects, First Edition, p80.
- Samurai, D. M. (2006). **"Foreign investment obstacles, legal guarantees"**, el-wehda Arabic Studies Center, First Edition, pp. 251-253
- Satpathy, I., and Das, B. (2007). ***Sustainable strategy and policy making module on infrastructure development via PPP mechanisms: a perspective for application in India***. Proc., 2007 Int. Conf. on Concession Public / Infrastructural Projects (ICCPPIP), Dalian Univ. of Technology, Dalian, China
- Schaufelberger, J.E. and Wipadapisut, I. (2003). ***Alternate financing strategies for build-operate-transfer projects***. **Journal of Construction Engineering and Management**, 129(2), p. 205-213.
- Sezer, Y. (2000). **" Build- Operate- Transfer (BOT) - A Look at Public Services - Model"**. PhD thesis, Marmara University Institute of Social Sciences, Department of Public Law, p. 5
- Shah, M. J. (2003). **Build, Operate, And Transfer (BOT)Project delivery System in Saudi Arabia**. master research, Construction Management, King Fahd University of Petroleum and Minerals, KSA.

- Sharaf El-Din. A. (2001). **Contracts for infrastructure projects with system of building, operation and transfer ownership BOT**, Rights of Ain Shams, p15
- Sharaffudin, H & AL-Mutairi, A. (2015). ***Success Factors for the Implementation of Build Operate Transfer (BOT) Projects in Kuwait***, **International Journal of Business and Management**; Vol. 10, No. 9; 2015, ISSN 1833-3850 E-ISSN 1833-8119, Published by Canadian Center of Science and Education
- Shukla, N., Panchal, R., and Shah, N. (2014). ***Built-Own-Lease-Transfer (BOLT): A Public Private Partnership Model that Bridges Gap of Infrastructure in Urban Areas Civil***, Pandit Deendayal Petroleum University, Raysan, Gandhinagar, INDIA, **International Journal of Civil Engineering Research**. Volume 5, Number 2, pp. 135-144 Research India Publications
- Sohaib, saboa (2013.) **the legal system for contracts to build-operate-transfer BOT and its applications in Algeria**. master in public law, El Akhewa University mentouri, kstentinih, Algeria.
- Sri Eddien, H. S. (2001) ***The financing and contractual philosophy of infrastructure projects Financed by the private sector***, The Sixth International Conference, Infrastructure projects Financed by the private sector, Sharm El Sheikh, p. 44, presented **paper work in the training course on the establishment of projects under the BOT system, Cairo session**, sponsored by the Islamic Development Bank, Jeddah, Saudi Arabia, p17.

- **Strategic Plan for the Water Authority 2016-2018**, p. 26
- **Strategic Plan for Water Authority 2016-2018**, p. 31
- Syed Kamarul Bakri, Syed Ahmad Bokharey, Kalaikumar Vallyutham, Narayanan Sambu Potty and Nabilah Abu Bakar (2010). ***Risks and Mitigation Measures in BuildOperate-Transfer Projects***, World Academy of Science, Engineering and Technology, **International Journal of Civil and Environmental Engineering**, Vol:4, No:3, p84
- Tenne, A. (2010). ***Seawater Desalination in Israel: Planning, Coping with Difficulties, and Economic Aspect of Long Term Risks***. The Israel Water Authority - Desalination Division.
- The institute of internal auditor, global (2011).” **Supplemental Guidance: Public Sector Definition”**.
- **The Palestinian Chronicle**, No. 7, 25 October 1995, p. 10
- **The Palestinian Water Authority**
- **the Staff of the World Bank Group** for the G20 Investment and Infrastructure Working Group. (2014). ***Overcoming constraints to the financing of infrastructure Success Stories and Lessons Learned: Country, Sector and Project Examples of Overcoming Constraints to the Financing of Infrastructure***, February 2014
- Toobar, M. (2008). **Feasibility Study and BOT System**, First Edition, Dar Al Farouk Cultural Investments, Cairo, p40.
- Torres, L. and Pina, V. (2001). ***Public-Private Partnership and Private Finance Initiatives in the EU Local Governments and Spain***. **The European Accounting Review**, Vol. 10, No. 3.

- Toulabi, H.M. (2013). **Identify Criteria Success for BOT Projects in IRAN**. Young Researchers and Elite Club, Khorramabad Branch, Islamic Azad University, Khorramabad, Iran, *Advances in Environmental Biology*, 7(8), p p.2037-2040.
- UNIDO. (1996). **BOT, Guide Lines for Infrastructure Development through, Build – Operate – Transfer (BOT) Projects**, page 3
- ur-Rahman, M. (2004). *Public Private Partnership (PPP) for Social Development: A South Asian Perspective*, *International Journal of Applied Public-Private Partnerships*, Volume 1 Issue 2, P10.
- Vaitheeswari, P. N. (2017). **ANALYSIS OF EPC CONTRACT AS BOT MODEL FOR THE PROPOSED WATER TREATMENT PLANT**, *SSRG International Journal of Civil Engineering - (ICETM-2017) - Special Issue*, p20
- Wang, R.L.K. Tiong, S.K. Ting and D. Ashley. (2000). **Foreign exchange and revenue risk: analysis of key contract clauses in China's BOT project**. *Construction Management and Economics*, 18(3), p. 311- 320.
- Wang, S.Q. and Tiong, L.K. (2000). *Case study of government initiatives for PRC's BOT power plant project*, *International Journal of Project Management*, (18), p.p 69-78
- Wang, S.Q. et al. (2000). *Evaluation and management of political risks in China's BOT projects*. *Journal of Construction Engineering and Management*, pp 242-250, ASCE.

- Wang, S.Q., Tiong, R.L.K., Ting, S.K. and Ashley, D. (2000). **Evaluation and management of foreign exchange and revenue risks in China's BOT project.** *Construction Management and Economics*, 18(2), p. 197-207.
- **Water Authority Law No. 2 of 1996**
- Wibowo, A. (2004). **Valuing guarantees in a BOT project.** *Engineering, Construction and Architectural Management*, 11(6), p. 395-403.
- Wolfs, M., and Woodroffe, SH. (2002). ***Structuring and Financing International BOO/BOT Desalination Projects***, *Desalination*, Vol. 142, pp. 101-106.
- world Bank group PPP IRC. (2016). ***PUBLIC-PRIVATE-PARTNERSHIP IN INFRASTRUCTURE***, RESOURCE CENTER, p6-8
- World bank. (1993). ***Developing the occupied territories: An investment in peace.***
- Xenidis, Y., and Angelides, D. (2005). ***The financial risks in build operate-transfer projects.*** *Constr. Manage. Econom.*, 23(4), 431–441.
- Yang-Cheng Lu, Soushan Wu, Dar-Hsin Chen, and Yun-Yung Lin (2000). ***BOT Projects in Taiwan Financial Modeling Risk.*** Term Structure of Net Cash Flows, and Project at Risk Analysis, **The Journal of Structured Finance**, Vol. 5, No. 4: pp. 53-63
- Ye, S. and Tiong, R.L.K. (2003). ***The effect of concession period design on completion risk management of BOT projects.*** *Journal of*

Construction Management and Economics, Volume 21, pp 471-482, Taylor & Francis Limited.

- Yerlikaya, G. K. (2002) " **Build- Operate- Transfer (BOT) model, legal nature and taxation**". PhD thesis, Al-Kareem Publishing, Ankara, p. 25
- Younos, T. (2005). *Environmental Issues of Desalination*, **Journal of Contemporary Water Research & Education**, Issue 132, pp. 11-18
- Younos, T. (2005). *Permits and Regulatory Requirements*, **Journal of Contemporary Water Research & Education**, Issue 132, pp. 19-26.
- Yusof, A., and Salami, B. (2013). *Success Factors for Build Operate Transfer (BOT) Power Plant Projects in Iran*, **International Journal of Modern Engineering Research (IJMER)**, Vol.3, Issue.1, pp-324-330
- Yusuf. M. (2005). *Sources of financing of municipal investments in the areas of urban planning, movement and transport and the development of these investments in Egypt*. Conference on urban planning and issues of movement, transport and traffic in Arab countries, Arab Institute for Urban Development, Syria, Hama.
- Zayed, T.M. and Chang, L.M. (2002). *Prototype Model for build-operate transfer risk assessment*. **Journal of Management Engineering**, 18 (1). p. 7-16.
- Zhang, X. Q. (2001). **Procurement of privately financed infrastructure projects**. Ph.D. thesis, Univ. of Hong Kong, Hong Kong Special Administrative Region

- Zhang, X., and AbouRisk, S. S. (2006). **Relational concession in infrastructure development through public-private partnerships.** Proc., CIB W89 Int. Conf. on Building Education and Research, CIB, Hong Kong.
- Bajpai, N. (2011) “**Business Research Methods**” Pearson Education India, published by Dorling Kindersley india Pvt.Ltd, ISBN 978-81-5448-1
- Herbst, F. & Coldwell, D. (2004) **Business Research**, Juta and Co Ltd, south Africa, ISBN 0-7021-6635-9, p.15
- Kumar, R. (2008) “**Research Methodology**” APH Publishing Corporation, ISBN 8131304191, 9788131304198
- An interview with Minister Thafer Al-Mulhem, Chairman of the Energy Authority in 7/2/2018
- An interview with the businessman Sameeh Tbelah, Minister of Transport and Communications, February 7, 2018.
- An interview withFuad Rammal (Administrative Director at PWA, 28/5/2017)

Appendix

Appendix num.1**List of Arbitrators**

- *Dr.Eng. Mufid Mohammed Hasaina - Minister of Public Works and Housing*
- *Eng. Mazen Ghoneim - Chairman of the Palestinian Water Authority*
- *Eng. Zafer Al-Melhem, Chairman of the Palestinian Energy Authority*
- *Eng. Sameeh Tbila - Minister of Transport and Communications*
- *Mr. Fuad Rammal, Administrative Director, Water Authority*
- *Dr. Ali Barakat - Al - Najah National University*
- *Dr. Mohammed Abu Zayed - Birzeit University*
- *Dr. Attiah Mosleh - Al - Quds Open University-Human Resource Management*
- *Dr. Nour Al-Aqra' – Al-quds Open University- Academic Assistant-General Administration*
- *Dr. Iyad Khalifa – Al-quds University / Abu Dees-Strategic planning*
- *Dr. Ahmed Harz Allah – Al-quds University / Abu Dees*

Appendix num.2

"The questionnaire"

Under supervisor

Dr.Abdul Fattah Shamleh

Dr.Salah Sabri



An-Najah National University

College of Graduate Studies

Master of Engineering Management

Dear government official and Businessmen's..

Greetings,

A questionnaire which is data collection tool for the study titled **"Implementation Obstacles of Build – Operate – Transfer (BOT)* Model in Palestine Infrastructure – Water and Electricity Sector"**. The aim of this study, is to pinpoint the impediments that faced the adaption of BOT strategy with view to the developer remedial measures to enable a successful adaption of this strategy in Palestine .

You are kindly requested to help in achieving this objective by responding this questionnaire. The information you provide is considered extremely confidential and it will be used for this research only.

The study is conducted in partial fulfillment of the requirements to obtain a master's degree in engineering management from Al-Najah National University.

If you have any queries you are welcome to contact the researcher via e-mail: Oalaqra@qou.edu or through mobile number: 0597946137

Thank you for your efforts

Obayda Alaqra'

***BOT is a strategy whereby a private investor undertakes the construction / building of any infrastructure projects as (water networks or electric power-stations) from their own resources. It operates and manages it for a specified period in agreement with the governmental authorities. Until it retains the costs and profits agreed. At the end of the period, the ownership of the project is transferred to the government. The term partnership, wherever mentioned in this questionnaire, is referred to as the BOT strategy.**

Part one: the general information

Gender : ☐Male ☐Female

Age group: ☐Less than 20 years ☐25- less than 30 ☐30- less than 40 ☐40- less than 50 ☐50- less than 60 ☐More than 60 years

Institutional reference variable: ☐Water Authority ☐Energy and Natural Resources Authority ☐businessmen

Functional variable: ☐Director ☐general Director ☐Director of department ☐supervisor ☐businessmen

years of experience: ☐Less than two years ☐2- less than 5 ☐5- less than 10 ☐10 -less than 15 ☐More than 15 years

Academic qualifications: ☐inter media diploma ☐ B.Sc. ☐ M.A. ☐ Ph.D.

Specialization: ☐Human sciences ☐ Natural Sciences

Persuasion variable: ☐Yes ☐No

part two:

write (X) in the appropriate place that represent you opinion about the level of influence of each of the following obstacles given in six categories' :

Obstacles	Level of influence				
	Very strong	strong	mid	weak	Very weak
legal obstacles					
Misty items of the contract between the government and investors					
Some legislations are repellent for investment in infrastructure projects.					
Cloudiness of authorities, obligations and rights of both parties					
Misty contracting between the government and investors					
Weak mechanisms for the selection of the most suitable bidders					
Weak frames of reference to resolve disputes that may arise between the government and contractors					
Absence or weakness of laws governing the partnership in Palestine					
Lack of systems to operate BOT projects.					
Existing legislation does not provide a fair opportunity to encourage investment in accordance with the BOT strategy					
Absence or weakness of the regulations and principles that govern implementation					
Absence of the role of the Legislative Council in passing laws for BOT adoption					
Obstacles	Level of influence				
	Very strong	strong	mid	weak	Very weak
administrative obstacles					
Poor coordination mechanisms between the government and investor					
lack or absence of awareness of partnership procedures					
Government lacking vision for BOT projects					
Misty of BOT projects ownership transfer procedures					
Misty time limitations for transferring ownership of BOT projects to the government					
The difficulty of predicting the challenges entailed in BOT contracts					
Weak plans for implementing the partnership					

The absence or weakness of the mutual strategic vision					
The limited number of investors who are able to implement BOT projects					
The government claim the right to decide solely.					
Negotiations on BOT projects consumes a lot of time					
Investor claim the right to decide solely					
Many stakeholders are involved in BOT strategy adoption (municipalities, ministries, etc.)					
The complexity of government procedures and regulations					
Lack or weakness of time frame flexibility					
Obstacles	Level of influence				
	Very strong	strong	mid	weak	Very weak
Financial obstacles					
Some Parties are not convinced that BOT strategy leads to cost reduction					
The unsatisfactory government guarantees to paying its financial obligations to the parties contributing to the BOT projects.					
The possible negative impact of entry of foreign investor					
The government does not provide Adequate guarantees to pay its dues					
The inability of the government to compensate investors for the additional emergency costs					
Weakness ability of the government's to evaluate the completed projects					
The huge financial requirements to implement BOT projects					
Weak guarantees provided by the government to investors					
Bank policies related to transfers, lending, exchange					
Misty or weak pricing of services and spending policies					
Financial risks facing investors (currency rate, interest rate, inflation)					
Obstacles	Level of influence				
	Very strong	strong	mid	weak	Very weak
political obstacles					
The strict Israeli control over large areas (Area C)					
Israeli Military dominance and restrictions on the					

use of the Palestinian infrastructure and natural resources					
Intervention of political parties in the implementation of BOT projects					
International regulations imposed on banking transactions					
The Israeli occupation orders, field practices and policies					
Government impose more limitations while implementing the partnership contract.					
Subsequent governments can deny the obligations of the previous government					
Obstacles	Level of influence				
	Very strong	strong	mid	weak	Very weak
Social obstacles					
Absence or weak guarantees regarding public misuse of BOT facilities					
The prevailing public culture does not drive towards the profitability of the private sector					
Low investor confidence in government and societal intentions					
Investor linkages and their references					
Low public confidence in investors intentions					
Obstacles	Level of influence				
	Very strong	strong	mid	weak	Very weak
Technical obstacles					
The absence of standards governing the expected performance specifications					
Lack or weakness of feasibility studies related to BOT projects					
Lack of government experience in BOT projects management					
Government and investors don't possess the sufficient awareness regarding BOT					
Inefficient use of resources in BOT project					
Lack of experience with the contractor and investors					

Do you have any comment in regard to this study and its data collection tool. If yes please write it down.

Appendix num.3

State of Palestine
Palestinian Energy & Natural Resources
Authority



دولة فلسطين
سلطة الطاقة والموارد الطبيعية

Tuesday, April 3, 2018

To whom it may concern

This is to certify that we don't have any restrictions in allowing the researcher obayda alaqra' and her supervisor Dr.abd alfattah alshamich & Dr.salah sabri to conduct research study titled "Major Obstacles Facing the implementation of Build-Operate-Transfer (BOT) Model in Palestinian Infrastructure-water and electricity sector"

It will be our pleasure to provide the researcher with all data and facilities required for the completion of the research.

We will be delighted to hear from the researcher about their finding and conclusion. This will help our organization to encounter the problems and concerned of BOT adaption in the for seen future.

We are thankful for the researcher to their efforts and for the completion of this research.

Best regards,

Reem Karzon
Acting Chairman Assistant for
Financial & Administrative Affairs



Appendix num.4

STATE OF PALESTINE
WATER AUTHORITY



دولة فلسطين
سلطة المياه

3/3/2018

To whom it may concern

This is to certify that we not have any reservation in allowing the researcher obayda alaqra' and her supervisor Dr.abd alfattah alshamleh & Dr.salah sabri to conduct research study titled "Major Obstacles Facing the implementation of Build-Operate-Transfer (BOT) Model in Palestinian Infrastructure-water and electricity sector"

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We will be delighted to hear from the researcher about their finding and conclusion. This will help our organization to encounter the problems and concerned of BOT adaption in the for seen future.

We are thankful for the researcher to their efforts tad for the completion of this research.

Best regard

Mahmoud Mizheer

G.D Of Admin & Financial Dep



APPENDEX NUM(5)

tables (40-47) show the distribution of the research community depending on their independent variables.

Table (40): Distribution of the valid study sample according to gender variable

	Gender	Counts	Per.
water and energy authority	Male	102	56.4
	Female	79	43.6
	Total	181	100.0
Businessmen	Male	191	97.9
	Female	4	2.1
	Total	195	100.0
Total sample	Male	293	77.93
	Female	83	22.07
	Total	376	100%

Table (41): Distribution of the study sample according to age group variable

The sample	age group	Counts	Per.
water and energy authority	Less than 25	8	4.4
	25 less than 30	31	17.1
	30 less than 40	50	27.6
	40 less than 50	57	31.5
	50 less than 60	35	19.3
	the total	181	100.0
Businessmen	Less than 25	3	1.5
	25 less than 30	32	16.4
	30 less than 40	52	26.7
	40 less than 50	64	32.8
	50 less than 60	44	22.6
	the total	195	100.0
Total sample	water and energy authority	181	48.14
	Businessmen	195	51.86
	Total	376	100%

Table (42): Distribution of the study sample according to the institutional reference variable

Institutional reference	Counts	Per.
water authority	121	66.9
Energy and natural resources authority	60	33.1
the total	<u>181</u>	100.0
private sector	<u>195</u>	100.0
Total sample	367	100%

**Table (43): Distribution of the study sample according to the variable of
functionality**

The sample	Functionality	Counts	Per.
water and energy authority	General Director	12	6.6
	Department Director	58	32.0
	Head of the Department	39	21.5
	An employee	72	39.8
	The total	181	100.0
Businessmen (private sector)	The total	195	100.0
Total sample		376	100%

Table (44): Distribution of the sample of the study according to the variable years of experience

The Sample	Years of Experience	Counts	Per.
Water and Energy Authority	Less than two years	12	6.6
	2 less than 5	29	16.0
	5 less than 10	52	28.7
	10 less than 15	42	23.2
	15 years and more	46	25.4
	The total	181	100.0
Businessmen	Less than two years	2	1.0
	2 less than 5	26	13.3
	5 less than 10	40	20.5
	10 less than 15	61	31.3
	15 years and more	66	33.8
	The total	195	100.0
Total sample	Water and Energy Authority	181	48.14
	Businessmen	195	51.86
	The total	376	100%

Table (45): Distribution of study sample according to the variable of scientific qualification

The Sample	Qualification	Counts	Per.
Water and Energy Authority	Average Diploma	26	14.4
	BA	89	49.2
	M.A.	59	32.6
	Ph.D.	7	3.9
	The total	181	100.0
Businessmen	Average Diploma	36	18.5
	BA	102	52.3
	M.A.	49	25.1
	Ph.D.	8	4.1
	The total	195	100.0
Total sample	Water and Energy Authority	181	48.14
	Businessmen	195	51.86
	Total	376	100%

Table (46): Distribution of the study sample according to the specialization variable

The sample	Specialization	Counts	Per.
Water and Energy Authority	Human sciences	100	55.2
	Research – Natural Sciences	81	44.8
	The total	181	100.0
Businessmen	Human sciences	132	67.7
	Research - Natural Sciences	63	32.3
	The total	195	100.0
Total sample	Water and Energy Authority	181	48.14
	Businessmen	195	51.86
	The total	376	100%

Table (47): Sample distribution study according to the variable of How convinced you are on BOT model

The sample	Extent of conviction of adopting BOT model	Counts	Per.
Water and Energy Authority	Yes	158	87.3
	No	23	12.7
	The total	181	100.0
Businessmen	Yes	163	83.6
	No	32	16.4
	The total	195	100.0
Total sample	Water and Energy Authority	181	48.14
	Businessmen	195	51.86
	The total	376	100%

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APPENDIX NUM(6)

Table 48: Means of level of influence of all categories of obstacles.

Dimensions	Govt. officials		Business men		Average		level of influence
	St. Dev.	Mean	St. Dev.	Mean	St. Dev.	Mean	
legal obstacles	.69	3.79	.65	3.83	0.67	3.81	High
administrative obstacles	.52	3.86	.56	3.85	0.54	3.855	High
financial obstacles	.49	3.76	.60	3.79	0.545	3.775	High
Political Obstacles	.52	3.97	.78	3.97	0.65	3.97	High
Social obstacles	.58	3.78	.61	3.77	0.595	3.775	High
Technical obstacles	.61	3.70	.59	3.70	0.6	3.7	High
Average	.46	3.81	.47	3.82	0.465	3.815	High

APPENDEX NUM (7)

Table (49): Overall means and standard deviations of legal obstacles.

items	Total		Level
	mean.	St. Div	
Absence of the role of the Legislative Council in passing laws for BOT adoption	4.22	0.8	Very High
Absence or weakness of the regulations and principles that govern implementation of BOT project.	3.985	0.91	High
Existing legislation does not provide a fair opportunity to encourage investment in accordance with the BOT strategy	3.88	0.95	High
Lack of systems to operate BOT projects.	3.855	0.945	High
Absence or weakness of laws governing the partnership in Palestine	3.825	1.05	High
Weak frames of reference to resolve disputes that may arise between the government and contractors	3.815	0.97	High
Weak mechanisms for the selection of the most suitable bidders	3.755	0.985	High
Misty contracting between the government and investors	3.72	1	High
Cloudiness of authorities, obligations and rights of both parties	3.675	0.93	High
Some legislations are repellent for investment in infrastructure projects.	3.66	1.01	High
Misty items of the contract between the government and investors	3.55	0.935	High
Average	3.81	0.67	High

Table (50): The administrative obstacles arithmetical means of the study sample responses.

items	Total		Level
	mean.	St. Div	
Poor coordination mechanisms between the government and investor	3.93	0.85	High
lack or absence of awareness of partnership procedures	3.925	0.83	High
Government lacking vision for BOT projects	3.92	0.86	High
Misty of BOT projects ownership transfer procedures	3.91	0.85	High
Misty time limitations for transferring ownership of BOT projects to the government	3.9	1.96	High
The difficulty of predicting the challenges entailed in BOT contracts	3.89	0.85	High
Weak plans for implementing the partnership	3.88	0.855	High
The absence or weakness of the mutual strategic vision	3.87	0.875	High
The limited number of investors who are able to implement BOT projects	3.83	0.855	High
The government claim the right to decide solely.	3.815	0.88	High
Negotiations on BOT projects consumes a lot of time	3.805	0.885	High
Investor claim the right to decide solely	3.785	0.87	High
Many stakeholders are involved in BOT strategy adoption(municipalities, ministries, etc.)	3.775	0.945	High
The complexity of government procedures and regulations	3.705	0.94	High
Lack or weakness of time frame flexibility	3.695	0.915	High
Average	3.81	0.505	High

Table (51): Financial obstacles, mean responses of the sample

items	Total		Level
	mean.	St. Div	
Some Parties are not convinced that BOT strategy leads to cost reduction	4.12	2.285	High
The unsatisfactory government guarantees to paying its financial obligations to the parties contributing to the BOT projects.	3.99	0.815	High
The possible negative impact of entry of foreign investor	3.95	0.835	High
The government does not provide Adequate guarantees to pay its dues	3.9	0.72	High
The inability of the government to compensate investors for the additional emergency costs	3.795	0.83	High
Weakness ability of the government's to evaluate the completed projects	3.77	0.86	High
The huge financial requirements to implement BOT projects	3.74	1.605	High
Weak guarantees provided by the government to investors	3.64	1.355	High
Bank policies related to transfers, lending, exchange	3.575	1.015	High
Misty or weak pricing of services and spending policies	3.545	1.015	High
Financial risks facing investors (currency rate, interest rate, inflation)	3.51	1.01	High
Average	3.775	0.545	High

Table (52) : means of political obstacles, sample responses

items	Total		Level
	mean.	St. Div	
The strict Israeli control over large areas (Area C)	4.29	0.815	High
Israeli Military dominance and restrictions on the use of the Palestinian infrastructure and natural resources	4.195	0.825	High
Intervention of political parties in the implementation of BOT projects	4.11	0.835	High
International regulations imposed on banking transactions	3.865	0.77	High
The Israeli occupation orders, field practices and policies	3.845	2.4	High
Government impose more limitations while implementing the partnership contract.	3.665	0.885	High
Subsequent governments may deny the obligations of the previous government	3.39	1.11	High
Average	3.97	0.65	High

Table (53) : means of Social obstacles(overall).

items	Total		Level
	mean.	St. Div	
Absence or weak guarantees regarding public misuse of BOT facilities	3.995	0.96	High
The prevailing public culture does not drive towards the profitability of the private sector	3.795	0.98	High
Low investor confidence in government and societal intentions	3.745	0.885	High
Investor linkages and their references	3.73	0.775	High
Low public confidence in investors intentions	3.62	0.94	High
Average	3.775	0.595	High

Table(54) : Technical obstacles, means of study sample responses

Items	Total		Level
	mean.	St. Div	
The absence of standards governing the expected performance specifications	3.84	0.995	High
Lack or weakness of feasibility studies related to BOT projects	3.805	0.96	High
Lack of government experience in BOT projects management	3.75	0.96	High
Government and investors don't possess the sufficient awareness regarding BOT	3.745	0.825	High
Inefficient use of resources in BOT project	3.605	0.915	High
Lack of experience with the contractor and investors	3.48	1.035	High
Average	3.7	0.6	High

المعوقات الأساسية التي تواجه تطبيق نموذج البناء والتشغيل
ونقل الملكية (BOT) في البنية التحتية الفلسطينية بالتطبيق
على قطاع المياه والكهرباء

إعداد

عبدة عبد الهادي مراعبة

إشراف

د. عبد الفتاح الشملة

د. صلاح صبري

قدمت هذه الأطروحة استكمالاً لمتطلبات الحصول على درجة الماجستير في الإدارة الهندسية في
كلية الدراسات العليا في جامعة النجاح الوطنية، نابلس، فلسطين.

ب

المعوقات الأساسية التي تواجه تطبيق نموذج البناء والتشغيل ونقل الملكية (BOT) في البنية التحتية الفلسطينية بالتطبيق على قطاع المياه والكهرباء

إعداد

عبدة عبد الهادي مراعبة

بإشراف

د. عبد الفتاح الشملة

د. صلاح صبري

الملخص

هدفت الدراسة إلى تحديد المعوقات التي تحول دون تطبيق نموذج BOT في البنية التحتية الفلسطينية على قطاعي المياه والكهرباء.

حاولت الدراسة الإجابة عن سؤالها الرئيس: ما هي المعوقات القانونية، والإدارية، والمالية، والسياسية، والاجتماعية والفنية التي تواجه تنفيذ نموذج BOT في البنية التحتية الفلسطينية في قطاع المياه والطاقة، حيث تم تناول كل معوق من المعوقات التي شملتها الدراسة ضمن مجموعة من الأسئلة الفرعية، وذلك للإجابة عن السؤال الرئيس للدراسة.

تم دراسة الأدبيات ذات الصلة، كما أجرت الباحثة مقابلات مع العديد من المسؤولين الحكوميين ورجال الأعمال للتعليق على نتائج الدراسة وقامت بتصميم استبانته كأداة لجمع البيانات، وتضمنت الاستبانة 55 عبارة تم تصنيفها ضمن ست فئات رئيسية من المعوقات وهي: القانونية التي ضمت 11 عبارة، الإدارية ضمت 15 عبارة، المالية ضمت 11 عبارة، الاجتماعية ضمت 5 عبارات، السياسية 7 عبارات، المعوقات الفنية 6 عبارات. واستخدمت الباحثة مقياس ليكرت الخماسي وهو: (مرتفع جدًا، مرتفع، معتدل، ضعيف، ضعيف جدًا).

تكوّن مجتمع الدراسة من (668) منها (208) هم موظفي سلطتي الطاقة والمياه و(460) من رجال الأعمال (المصنفين A)، وتكونت عينة الدراسة من 430 منها 230 من رجال الأعمال و200 من موظفي سلطتي الطاقة والمياه، وكانت الصالحة للتحليل 376 استبانته، تم اختيار عينة الدراسة لتغطية جميع المسؤولين الحكوميين في سلطتي المياه والطاقة و 50 ٪ من رجال الأعمال، وتم

إجراء تحليل البيانات باستخدام برنامج التحليل الإحصائي SPSS بعد ترميز الاستبيان، وتم التعبير عن نتائج التحليل الوصفي باستخدام النسب المئوية والمتوسطات الحسابية الموزونة واختبار (ت) t Test، وتحليل التباين الأحادي One Way Anova، و معادلة كرونباخ الفا - Cronbach's Alpha (الأتساق الداخلي)، وبعد ظهور الأرقام الإحصائية في الجداول، تم تحليلها نظرياً من خلال الاستفادة من مراجعة الأدبيات.

تشير النتائج إلى أن مستوى تأثير جميع التصنيفات الست من المعوقات كان مرتفعاً بوسط حسابي 3.815 ومتوسط حسابي من 3.70 إلى 3.97 ومستوى استجابة مرتفع على جميع الفئات، وكانت العقبات السياسية هي العوامل الأكثر تأثيراً مع وسط حسابي 3.97. حيث كان أعلاها: (سيطرة الجانب الإسرائيلي على مساحات واسعة من مناطق C بوسط حسابي 4.29، وأمر وضوابط وتعليمات الحكم العسكري بخصوص استخدام البنية التحتية الفلسطينية بوسط حسابي 4.195، تدخل الاتجاهات السياسية في تنفيذ مشاريع ال BOT بوسط حسابي 4.11). 55 عبارة كانت على مستوى عالٍ من حيث تأثيرها، في حين أن هناك عبارة واحدة فقط صنفت بمستوى تأثير متوسط وهي (إمكانية تكرر الحكومات اللاحقة لالتزامات الحكومة السابقة بوسط حسابي 3.32).

وخرجت الدراسة بتوصيات موجهة للقطاعين العام والخاص وكان أهمها:

توصيات موجهة للقطاع العام (الحكومة)

توصي الباحثة بإنشاء وحدة خاصة تابعة لرئاسة الوزراء للتعامل مع إستراتيجية تبني BOT. يجب أن تكون هذه الوحدة مسؤولة عن تنسيق تبني إستراتيجية BOT في المشروع مع الوزارات المختلفة، إضافة إلى إنشاء إطار عمل قانوني لتبني إستراتيجية ال BOT ضمن التوجه نحو الشراكة يحوي قواعد وإجراءات وضوابط تكييف إستراتيجية BOT من أجل بناء فرص جاذبة للمستثمرين، ووضع دليل BOT الذي يتناول جميع تفاصيل إستراتيجيات BOT والاسترشاد بتجربة الدول الأخرى في اعداد الدليل، كما اوصت بتعزيز ثقافة الشراكة من خلال المؤتمرات، التدريب وورش العمل والتوعية العامة، من خلال تعزيز الحوار مع القطاعات الاقتصادية المؤهلة لدخول الشراكة بنمط BOT وإظهار المكاسب التي يمكن ان تتحقق للقطاع الخاص من الدخول في مثل هذه العقود، وتقوم

الغرف التجارية بعقد الورش التي تهدف لتعميق فهم القطاع الخاص بأشكال الشراكة وبعقودها المختلفة والتي منها عقد BOT، وان تشجع الحكومة المؤسسات المالية على تبني رؤية مالية تتعلق بتمويل مشاريع ال BOT كأن تكون الحكومة هي الضامن للمستثمرين، وأكدت الباحثة على ضرورة إشراك ممثلي القطاع الخاص في مفاوضات الحل النهائي لكي يعبروا عن حاجاتهم ومصالحهم التي يمكن ان تتأثر بأي اتفاق سلام وان يختار المجلس التنسيقي الممثل للقطاع الخاص عضوا يكون ضمن فريق المفاوضات، وتطوير تعزيز التواصل بين القطاعين في مجال BOT من خلال تفعيل دور مجلس التنسيقي بين القطاعين العام والخاص وإدخال شركاء جدد من قطاعي المياه والكهرباء.

توصيات موجهة للقطاع الخاص

يقوم القطاع الخاص ممثلا بالمجلس التنسيقي بفتح قنوات اتصال مع الوزارات ذات العلاقة يعرض من خلالها قدرات وإمكانيات القطاع الخاص وإمكانياته المالية والبشرية اللازمة للدخول في شراكات من هذا النوع والمرتكزة على نمط ال BOT ، إضافة إلى قيامه بفتح قنوات اتصال مع سلطة النقد والبنوك المحلية والوطنية في سبيل الوصول الى آليات مالية لتمويل مشاريع ال BOT تضمن حقوق جميع الأطراف ذات العلاقة، كما دعت القطاع الخاص بان يبادر الراغبون منه في الدخول في شراكات تتعلق بمشاريع ال BOT في البنية التحتية الى التنسيق مع الوحدة الخاصة بالشراكة التابعة لمجلس الوزراء الى تقديم رؤية شاملة قابلة للتطبيق، ومتصلة بتجارب عربية مماثلة في سبيل حث القطاع العام على التوجه نحو هذا النمط من الشراكات، حيث توضح هذه الرؤية كل الإمكانيات التي يمتلكها القطاع الخاص والتي تؤهله في الدخول في مشاريع ال BOT.

وأخيرا أوصت الدراسة بعمل دراسات مستقبلية عن مشاريع BOT تضم قطاع التمويل مثل البنوك والمؤسسات المالية والمجتمع (المستخدم النهائي) وتهدف الى التعرف على المعوقات التي تواجه المؤسسات المالية في التوجه لتمويل مشاريع البنية التحتية ضمن مشاريع ال BOT، وقامت الباحثة ببناء نموذج بالاستناد الى النتائج التي خرجت بها الدراسة للتغلب على معوقات التنفيذ لمشروع BOT في البنية التحتية الفلسطينية: قطاعات شبكات المياه ومحطات توليد الكهرباء ودراسة المدخلات والمخرجات ونتائج التطبيق على الوضع الفلسطيني.