

Identification of Critical Success Factors (CSFs) for Public Private Partnership (PPP) Construction Projects in Syria

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ABSTRACT

The collaboration between the public and the private sectors is an important issue that has attracted the attention of most governments around the world. Public Private Partnership (PPP) is one important approach among many that meets this goal.

Syria, in the present time, needs this type of contract to reduce the huge pressure on the treasury by attracting the required funds for developing, extending and operating many vital infrastructure projects. In fact, the best results obtained from PPP contracts depend on determining the Critical Success Factors (CSFs), which are influenced by the local strategies and related to the nature of each of these factors and its importance, without neglecting the nature of the project under consideration.

This research aims at identifying the critical success factors that influence PPP projects in Syria based on previous similar studies supported by a structured questionnaire survey. It also attempts to uncover the current PPP practice and highlight the main obstacles that hinder its implementation in the Syrian construction industry. The identified CSFs are ranked according to their importance, for public and private sectors independently and collectively. This research ultimately aims at developing a new practical framework to help decision makers both in public and private sectors in selecting the optimum PPP contract for the construction industry in Syria taking the most important CSFs into account.

KEYWORDS: Public Private Partnership (PPP), Critical Success Factors (CSFs), Syria.

INTRODUCTION

Partnering between the public and private sectors is a way to bridge the financial gap between developing the infrastructure projects and the financial ability of governments specialized in developing these projects

with preserving the public rights.

Partnership between the public and private sectors is the key to achieve economic and social development. Thus, the investment through this method can establish large scale projects that will enhance development, achieve economic progress and increase local products (through regional cooperation and integration across borders). This will also reduce unemployment by

creating new job opportunities. This, in turn, will lead to lower rates of poverty in addition to providing products and services of high quality by raising workers' efficiency, developing departments of existing projects and contributing to the transfer of expertise and technology from the private sector to the public sector which will eventually lead to sales and profits increase.

RESEARCH AIMS AND OBJECTIVES

There is no clear framework for selecting Public Private Partnership (PPP) contracts in Syria along with the absence of legislation which regulates the partnering process. In addition, there is a lack of experience on this procurement system despite the urgent need for this type of contract in the present time by Syria to reduce the vast pressure on the government budget through getting help from the private sector to finance vital and necessary projects.

The aim of this research is to uncover the key critical success factors that affect PPP construction projects and to clarify its current practice and implementation in Syria as a first step to develop a new practical framework to help decision makers in both of the public and private sectors in selecting the optimum Public Private Partnership (PPP) contract. This research has been carried out at The Faculty of Civil Engineering- Damascus University- Syria, between 17/10/2012 and 30/9/2013.

RESEARCH METHODOLOGY

As mentioned above, this research ultimately aims at developing a new framework to help decision makers in both public and private sectors to select the optimum PPP contract for construction projects in Syria, taking the most important Critical Success Factors (CSFs) into account. As illustrated in Figure 1, initial factors were initially identified based on a comprehensive review of similar previous studies. The identified CSFs were then used to design a

questionnaire survey. The survey was supported with interviews to identify additional factors in the Syrian partnering environment and to understand the current practice of using PPP contracts in Syria. This helped to uncover nineteen CSFs and to rank them according to their importance, for public and private sectors independently and collectively before comparing the most important CSFs in Syria with those in four other countries.

In the second phase of this research, the influence of each of the identified CSFs will be analyzed with the aim to develop a new practical framework, which can help to recommend the optimum PPP contract considering the relevant factors, which usually this decision in Syria.

INTRODUCTION TO PUBLIC - PRIVATE PARTNERSHIP (PPP)

According to The National Council for Public-Private Partnerships in the USA, the concept of partnership is defined as:

"A legal relationship existing between two entities contractually associated as joint principals in a business" (The National Council for Public-Private Partnerships, 2010).

In this case, the two entities are the public and private sectors. The public sector is defined as:

"The part of national economy providing basic goods or services that are either not, or cannot be, provided by the private sector. It consists of national and local governments, their agencies and their chartered bodies. The public sector is one of the largest sectors of any economy" (Business Dictionary, 2011).

And the private sector is:

"The part of national economy made up of private enterprises. It includes the personal sector (households) and corporate sector (companies), and is responsible for allocating most of the resources within an economy" (Business Dictionary, 2011).

And the partnership contract between them is known as a PPP contract. A Public-Private Partnership

(PPP) contract is "a contractual agreement between a public agency (federal, state or local) and a private sector entity. Through this agreement, the skills and assets of each sector (public and private) are shared in delivering a service or facility for the use of the general

public. In addition to sharing resources, each party shares in the risks and rewards potential in the delivery of the service and/or facility" (The National Council for Public-Private Partnerships, 2010).

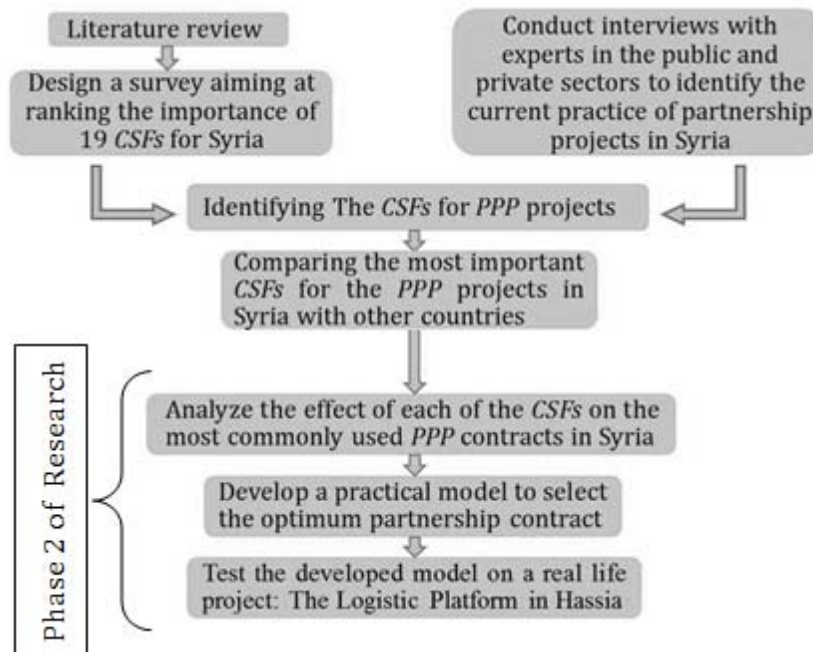


Figure (1): Research Methodology

PPP contracts come in a variety of forms, and it is not likely to find two PPP projects that are exactly the same. They vary in terms of how risks are allocated, in complexity and in the degree of expertise required. Therefore, different types of partnerships translate into different types of contracts.

The most famous PPP contracts mentioned by The National Council for Public-Private Partnerships in the USA are: Operations and Maintenance (O&M), Operations, Maintenance and Management (OMM), Design-Build (DB), Design-Build-Maintain (DBM), Design-Build-Operate (DBO), Design-Build-Operate-Maintain (DBOM), Design-Build-Finance-Operate-Maintain (DBFOM), Design-Build-Finance-Operate-Maintain-Transfer (DBFOMT), Build-Operate-Transfer (BOT), Build-Transfer-Operate (BTO), Build-

Own-Operate (BOO), Buy-Build-Operate (BBO), Developer Finance, Lease-Develop-Operate (LDO) or Build-Develop-Operate (BDO), Lease/Purchase, Sale/Leaseback, Turnkey (The National Council for Public-Private Partnerships, 2010).

In the traditional methods of contracting in Syria, the government provides the capital and operating costs required to build infrastructure projects and bear the risks related to the finance and construction (such as higher costs or delays). The most commonly used traditional methods of tendering in Syria are price offers and competitive bidding. The latter is the dominant tendering method.

But, recognizing the importance of sustainable development and improving the competitiveness of economy, it became necessary to attract huge

investments in various sectors to help Syria play a logistical role in the region and to reduce the pressure on the treasury by seeking help from the private sector in terms of financing, developing, extending and operating vital facilities, services and infrastructure projects.

The Syrian government has already begun to provide some of the basic requirements to achieve successful partnerships between the public and private sectors. These requirements include the political will to carry out and implement projects through granting exceptions and providing creative legislations for special projects in the absence of a clear PPP law, which ensures the rights and obligations of each party.

An example of these special and important projects is the Port of Latakia, which is a management plus revenue shared agreement (concession period 10+5 years). Other PPP projects include tourism projects in different Syrian provinces with BOT formula.

A BRIEF OVERVIEW OF PREVIOUS LITERATURE

Critical Success Factors (CSFs) are defined as:

"Those few key areas of activity in which favorable results are absolutely necessary for a manager to reach his/her goals" (Hardcastle et al., 2005).

The CSF method has been used in financial services as a management measure since the 1970s. Since 1982, it has been used in information systems and then in the manufacturing industry in the 1990s. There have been attempts to apply this method in construction management. In 1996, CSFs were explored for private contractors in competitive tendering and negotiation in BOT projects (Hardcastle et al., 2005).

In 2002, CSFs were considered in the management of public clients in BOOT procurement (Hardcastle et al., 2005).

Hardcastle, Edwards, Akintoye and Li (2005) analyzed the Critical Success Factors for PPP and Private Finance Initiative (PFI) projects in the UK construction industry and grouped seventeen factors

into five principal groups: (Effective procurement, Project implementability, Government guarantee, Favourable economic conditions and Available financial market). The political support factor lies outside this principal factor grouping. Hardcastle et al. also ignores the technology transfer factor as it is more relevant to projects undertaken in developing countries (Hardcastle et al., 2005).

Ismail and Ajija (2013) used a survey to rank the CSFs for PPP implementation in Malaysia. They found the top factors to be: (good governance, commitment and responsibility of public and private sectors, favourable legal framework, sound economic policy and available financial market). They also illustrated that only four factors signified the ranking difference between the public and private sectors: (Multi-benefit objectives, Competitive procurement process, Government involvement by providing guarantee, and finally Shared authority between public and private sectors).

Helmy and Lindbergh (2011) evaluated the development strategies of the Kuwaiti government, which included construction projects. The results were that the government needed to work on improving the environment for successful project implementation and to have full focus on three factors to make sure that the PPP will be successful in Kuwait construction sector. These factors were: (Effective procurement, Project implementability and Government guarantee) (Helmy and Lindbergh, 2011).

The following section shows how previous studies helped in the process of identifying the key critical success factors for PPP projects in Syria.

IDENTIFICATION OF CRITICAL SUCCESS FACTORS FOR PPP PROJECTS IN SYRIA

Critical success factors have been identified by many researchers to improve the success rate of PPP projects around the world. In the present study, a summary list of Critical Success Factors was developed based on previous similar studies.

Table 1 shows these factors along with the corresponding references.

Table 1. List of Critical Success Factors (Hardcastle et al., 2005)

Critical Success Factors	Source
Strong private consortium	Jefferies et al. (2002) Tiong (1996) Birnie (1999)
Appropriate risk allocation and risk sharing	Qiao et al. (2001) Grant (1996) Arthur Andersen and Enterprise LSE (2000)
Competitive procurement process	Jefferies et al. (2002) Kopp (1997) Gentry and Fernandez (1997) Arthur Andersen and Enterprise LSE (2000)
Commitment /responsibility of public/private sector	Stonehouse et al. (1996) Kanter (1999) NAO (200 lb)
Through and realistic cost/benefit assessment	Qiao et al. (2001) Brodie (1995) Hambros (1999)
Project technical feasibility	Qiao et al. (2001) Tiong (1996) Zantke and Mangels (1999)
Transparency in the procurement process	Jefferies et al. (2002) Kopp (1997) Gentry and Fernandez (1997) Arthur Andersen and Enterprise LSE (2000)
Good governance	Qiao et al. (2001) Frilet (1997) Badshah (1998)
Favorable legal framework	Bennett (1998) Boyfield (1992) Stein (1995) Jones et al. (1996)
Available financial market	Qiao et al. (2001) Jefferies et al. (2002) McCarthy and Tiong (1991) Akintoye et al. (200 lb)
Political support	Qiao et al. (2001) Zhang et al. (1998)
Multi-benefit objectives	Grant (1996) Stonehouse et al. (1996)
Government involvement by providing guarantees	Kanter (1999) Qiao et al. (2001) Zhang et al. (1998)
Sound economic policy	EIB (2000)
Stable macro-economic environment	Qiao et al. (2001) Dailami and Klein (1997)
Well organized public agency	Boyfield (1992) Stein (1995) Jones et al. (1996) Finnerty (1996)
Shared authority between public and private sectors	Stonehouse et al. (1996) Kanter (1999)
Social support	Frilet (1997)
Technology transfer	Qiao et al. (2001)

Based on this initial list of possible CSFs, a questionnaire consisting of three main sections was designed. A copy of this questionnaire is available upon request. The first section was assigned to identifying the most important critical success factors for PPP construction projects in Syria. The second part of the questionnaire aimed at identifying the most desirable PPP contracts in Syrian public and private organizations. The third and final part aimed at studying the current practice of PPP projects in Syria. The questionnaire also included a request to add any possible additional factors.

The calculated sample size was 30. Assuming a response rate of 25%, 120 questionnaires were distributed to consultants and managers in many government ministries interested in PPP projects and to directors and supervisors in the private sector and

international organizations involved in developing the Syrian business environment.

A total of 34 respondents completed and returned the questionnaire. 47% of the respondents were from the public sector, around 41% from the private sector and the rest (12%) were international organizations.

Approximately 18% of the respondents have longer than twenty one years of experience, and around 9% of them participated in at least five PPP projects.

The collected data from the first part was analyzed using the Statistical Package for Social Sciences (SPSS) software. An important index was calculated for each of the identified CSFs. This index is the statistical average of the scores given by the respondents. The identified nineteen factors were ranked in a descending order of their important indices as shown in Table 2.

Table 2. CSFs in Order of Their Importance in Syria

Critical Success Factors	Importance Index for Overall (out of 5)	Rank		
		Overall	Public Sector	Private & Other
Favorable legal framework	4.15	1	1	4
Political support	4.15	2	6	1
Good governance	4.12	3	2	3
Stable macro-economic environment	4.12	4	3	5
Appropriate risk allocation and risk sharing	3.94	5	11	2
Sound economic policy	3.91	6	8	8
Project technical feasibility	3.88	7	10	7
Through and realistic cost/benefit assessment	3.88	8	14	6
Well organized public agency	3.85	9	5	10
Transparency in the procurement process	3.85	10	4	12
Government involvement by providing guarantees	3.79	11	12	9
Available financial market	3.76	12	9	11
Strong private consortium	3.74	13	7	14
Commitment/responsibility of public/private sector	3.65	14	13	13
Shared authority between public and private sectors	3.41	15	16	15
Technology transfer	3.38	16	17	16
Competitive procurement process	3.35	17	15	17
Multi-benefit objectives	3.21	18	19	18
Social support	3.15	19	18	19

Table 3. Sources of Possible Additional CSFs

Additional Factors	Source
Value for money	(United Nations Development Programme, 2011)
Tax breaks	(United Nations Development Programme, 2011)
The ability to solve problems	(Nhele et al., 2011)
Experience	(Nhele et al., 2011)
The creditworthiness of the general contracting	(United Nations Development Programme, 2011)
Trust and respect	(Nhele et al., 2011)
Partner selection	(Nhele et al., 2011)
Commitment to implement judicial rulings	(Ministry of Local Administration, 2011)
Negotiation	(Nhele et al., 2011)
Time commitment	(Ministry of Local Administration, 2011)
The ability to bear the cost of the project	(United Nations Development Programme, 2011)
Commitment at all levels	(Ministry of Local Administration, 2011)
Team building and training	(Nhele et al., 2011)
Track record of the concerned country	(United Nations Development Programme, 2011)
Provide low-interest loans from local banks	(Ministry of Local Administration, 2011)
Availability of work requirements	(Ministry of Local Administration, 2011)
Cost of fuel, electricity, water..., etc.	(Ministry of Local Administration, 2011)
Readiness level of the concerned sector/ Nature of the service	(United Nations Development Programme, 2011)

For comparison between the perception of both public and private sectors on the importance of the Critical Success Factors, the studied sample was divided into two groups, the first group included respondents from the public sector and the second jointly included respondents from the private sector and other sectors; such as international organizations. Table 2 shows the different ranking of the nineteen Critical Success Factors by all respondents; public sector and private and other sectors' respondents.

At the same time, an Independent Sample t- Test was conducted to find any significant difference in perception of the public and private sectors related to the importance of the Critical Success Factors for the PPP projects in Syria. The result showed that there is no significant difference between the public and private sector perception.

Through the last section of the questionnaire survey, eighteen extra factors were added by respondents. These extra factors were added based on

the humble Syrian experience on partnership procurement, government reports about the problems facing PPP projects and other construction projects in Syria and on various lectures attended for this purpose. Table 3 displays the sources of these additional factors.

Only three factors out of the above list have been selected by 50% of the respondents or more. These are: Readiness level of the concerned sector/ Nature of the service; Cost of (fuel, electricity, water,... etc.); and the Availability of work requirements.

Therefore, these three factors were added to the initial nineteen Critical Success Factors as they might be distinctive to the Syrian procurement environment.

Figure 2 shows the frequency of respondents' nomination of the suggested additional CSFs.

Also, the respondents of this questionnaire were requested to identify the PPP contract that they see most desirable in the case of their organization, in order to identify the most favorable PPP contracts in Syria.

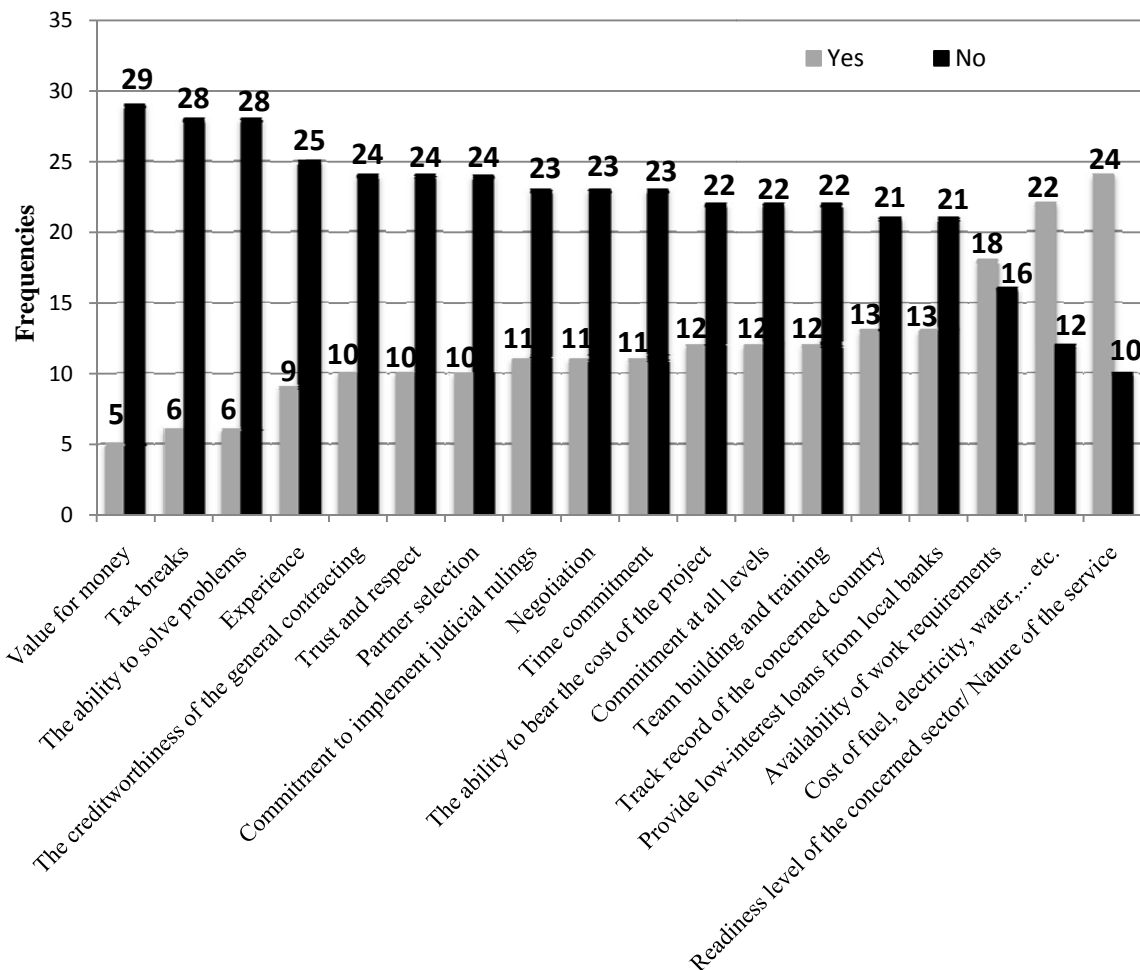


Figure (2): Frequencies of the Suggested Additional CSFs

Received data on preferred PPP contracts was analyzed using the same software (SPSS). The descriptive statistic of the mean score was computed for a four - point scale on each PPP contract. Then, the PPP contracts were ranked in a descending order according to their mean score.

As shown in Table 4, the top three preferred PPP contracts in Syria are: Build - Operate - Transfer (BOT), Operations Maintenance and Management (OMM) and Design - Build - Maintain (DBM).

COMPARISON BETWEEN SYRIA AND OTHER COUNTRIES IN TERMS OF TOP FIVE PPP CSFs

Ismail and Ajija (2013) compared between Malaysia and three other countries for the Top five CSFs for PPP implementation (Ismail and Ajija, 2013). In the present study, Syria was added to this comparison. Table 5 shows the top five CSFs for Syria compared to four other countries (United Kingdom, Australia, Hong Kong and Malaysia).

Table 4. The Desirability of PPP Contracts in Syria	
PPP Contracts	Rank
BOT	1
OMM	2
DBM	3
Developer Finance	4
DBO	5
DBFOMT	6
DBOM	7
DBFOM	8
Turnkey	9
O&M	10
BDO	11
BTO	12
BBO	13
BOO	14
LDO	15
DB	16
Lease / Purchase	17
Sale / Leaseback	18

Generally, Table 5 shows many differences in the ranking of the top five CSFs for PPP projects in the studied countries. It shows that Syria and the other four countries share one factor, which is "Appropriate risk allocation and risk sharing". This factor was ranked second in The UK, Australia and Malaysia. However, in Syria and Hong Kong it was ranked fifth.

The factor "Favorable legal framework" was on the top of CSFs in Syria and Hong Kong; while it came in the third place in Malaysia. Similarly, "Stable macro-economic environment" was ranked fourth in Syria and Hong Kong. "Good governance" was ranked third in Syria; while it was ranked first in Malaysia and fourth in Australia.

We notice that Syria and Hong Kong share three

factors (Favourable legal framework, Stable macro-economic environment and Appropriate risk allocation and risk sharing) with the same ranking (first, fourth and fifth), respectively.

In contrast, the factor "Political support" was ranked second in Syria, but it was ranked lower by the respondents in the United Kingdom, Australia, Hong Kong and Malaysia.

The factors "Strong and good private consortium" and "Commitment and responsibility of public and private sectors" were in the top five ranking for The UK, Australia and Hong Kong. However, in Syria these factors were ranked thirteenth and fourteenth, respectively.

CURRENT PRACTICE OF PPP IMPLEMENTATION IN SYRIA

In fact, the main problem facing PPP projects in Syria is the lack of legislations governing the rights and obligations of various parties. This was expressed by most of the respondents. Another problem was highlighted; weakness in the administrative and legal competencies of the public sector and the immaturity of the partnership experience of the private sector. Respondents also highlighted the lack of experienced private and public consulting organizations in Syria specializing in financial, technical and legal aspects related to PPP projects.

It is clear that there is an urgent need to develop a legal, cultural and regulatory PPP develop and support sound policies for PPP projects in Syria to determine the desired objectives and target sectors, with the aim of establishing a suitable environment that encourages both public and private sectors to engage in participatory projects. There is also a need for transition from a planned economy to a social market economy, which helps to increase the contribution of the private sector, which will in turn influence the popularity of these projects.

In order to analyze the current practice of PPP projects in Syria and to analyze all the comments and

observations made by the respondents in the third section in the survey, the Ishikawa method was used (Aji, 2012). This method is a useful analysis tool that provides a systematic way of looking at effects and their respective causes through a diagram representation. This diagram is based on a simple idea, similar in its stages, to the fish bone. Each arrow reflects the source of defect or deviation from the

specifications in the quality of the production process, whether it is a major cause or a sub-cause, it helps determine the target areas, to help collect more data for further study, and increase knowledge of the process that will help everyone learn and understand more about the factors that affect work and how they are related to each other (Aji, 2012).

Table 5. Top Five CSFs in Syria and Other Countries

No	Top Five CSFs in Syria	Top Five CSFs in Other Countries			
		UK	Australia	Hong Kong	Malaysia
1	— Favourable legal framework	■ Strong and good private consortium	◆ Commitment and responsibility of public and private sectors	— Favourable legal framework	♣ Good governance
2	Political support	❖ Appropriate risk allocation and risk sharing	❖ Appropriate risk allocation and risk sharing	◆ Commitment and responsibility of public and private sectors	❖ Appropriate risk allocation and risk sharing
3	♣ Good governance	○ Available financial market	■ Strong and good private consortium	■ Strong and good private consortium	— Favourable legal framework
4	● Stable macro-economic environment	◆ Commitment and responsibility of public and private sectors	♣ Good governance	● Stable macro-economic condition	Sound economic policy
5	❖ Appropriate risk allocation and risk sharing	Thorough and realistic assessment of the costs and benefits	Project feasibility technical	❖ Appropriate risk allocation and risk sharing	○ Available financial market

The Ishikawa method was used through the following basic steps:

1. The comments and observations made by the questionnaire respondents regarding the current PPP practice in Syria have been collected.
2. The problem to be analyzed has been identified; the obstructions facing PPP projects in Syria.
3. The key causes for these obstructions have been classified into four categories (The Public Sector,

The Private Sector, Administration Environment and The Investment Environment).

4. Using the Ishikawa diagram representation, for each key cause, more specific causes/factors (sub-branches) have been identified through asking a series of why? questions to establish a cause-and-effect relationship. This helped to uncover the root causes of a problem based on the respondents' answers.

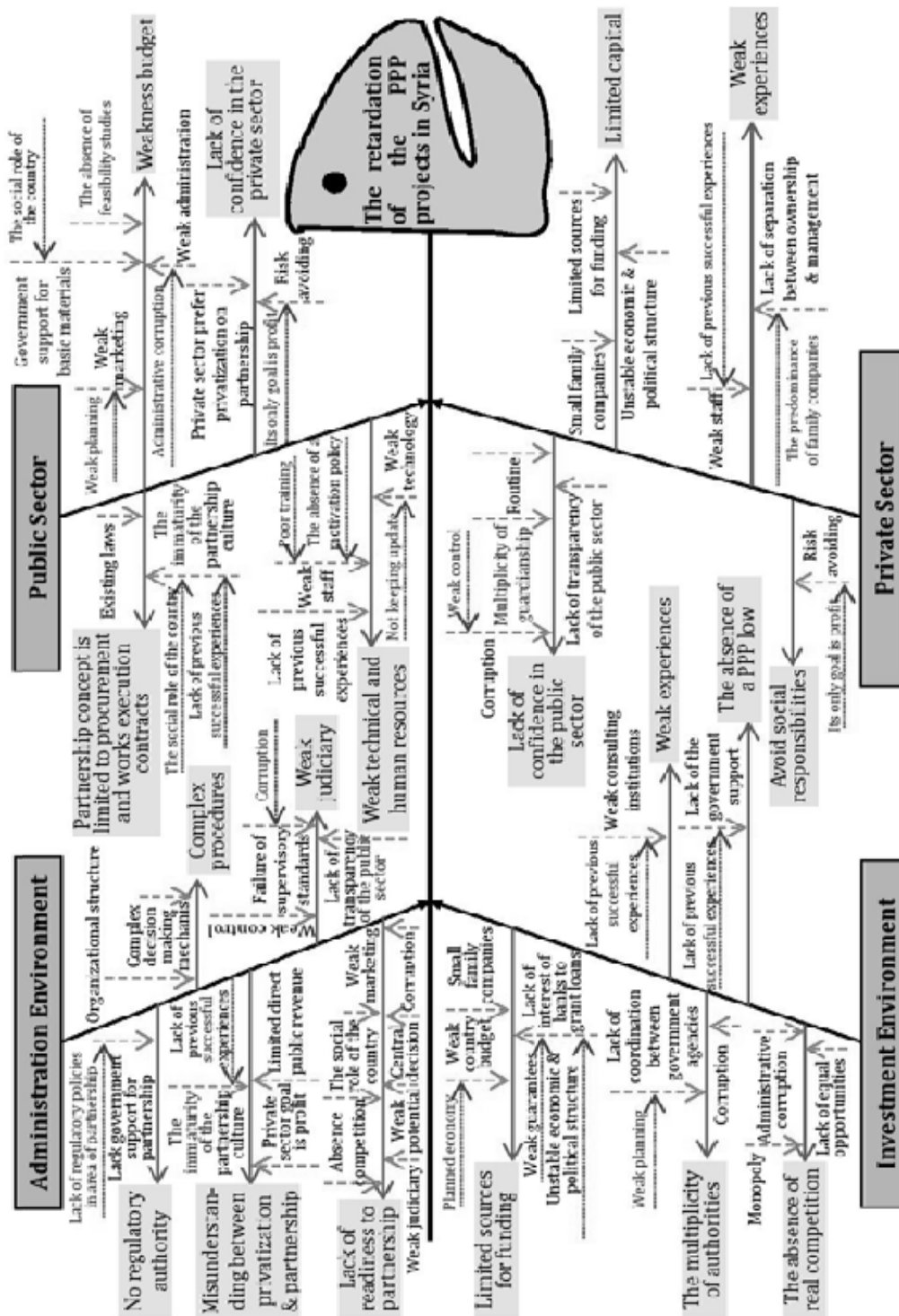


Figure (3): Ishikawa Diagram for Current Practice of PPP Projects in Syria

As shown in Figure 3, the main problems are related to: limited sources of funding and poor experiences in both public and private sectors, the confusion between the concept of privatization and partnership that leads to a lot of misunderstanding and loss of opportunities, the absence of a regulatory authority and a clear PPP law, weak judiciary system and the multiplicity of authorities and complex procedures.

Therefore, some essential factors should be worked on to start resolving these issues and to continue improving the partnership environment that should encourage companies to invest in Syria. This can be accomplished by the development of government plans, by providing feasible studies for the most important projects needed in Syria. Moreover, there is an urgent need for transition from a planned economy to a social market economy, by providing training to human resources in both sectors to gain more knowledge and experience and to clarify the concept of the partnership for both sides. Such actions will benefit the country as a whole by supporting the partnership culture and enhancing the trust between all parties. As mentioned earlier, there is also a need to develop a clear PPP law by improving the regulatory standards and increasing the level of penalties against corruption.

FUTURE RESEARCH WORKS

In order to develop a suitable framework for selecting the optimum PPP contract based on the respondents' perception of the effect of each factor of the CSFs on the three shortlisted PPP contracts; two more questionnaires are being designed for this purpose. The developed model will consist of two matrices that contain constant values based on statistical analysis of the second questionnaire findings. The last part of this research will include testing the proposed practical model on a real life case study; The Logistic Platform in the Industrial City of Hassia (Homs – Syria).

CONCLUSIONS AND RECOMMENDATIONS

This study has identified twenty two critical success factors that influence public and private partnership projects in the Syrian construction industry. Nineteen of these factors were initially identified based on a comprehensive review of previous similar studies using a questionnaire survey to uncover their importance level in Syria.

This questionnaire also sought to discover any additional factors that characterize the Syrian construction industry. As a result, three additional factors have been identified; Readiness level of the concerned sector/ Nature of the service, Cost of (fuel, electricity, water,... etc.) and Availability of work requirements.

Analyzing the current practice of PPP implementation in Syria highlighted many obstacles facing partnering contracts as illustrated using an Ishikawa diagram. The main problems facing PPP projects in Syria are: lack of legislations, weakness in the administrative and legal competencies of the public sector, immaturity of the partnership experience in the private sector and lack of experienced private and public consulting organizations in Syria specializing in financial, technical and legal aspects of PPP projects.

It is clear based on the findings of the conducted questionnaire that there is an urgent need in Syria to develop a legal, cultural and regulatory PPP environment. There is also a need for transition from a planned economy to a social market economy, which can help to increase the contribution of the private sector in developing the Syrian economy. In the second phase of the present research, the influence of the key identified CSFs is being analyzed aiming at developing a new practical framework to help decision makers in the process of selecting the optimum PPP contact for a particular project.

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