

# Decision Support System In Public-Private Partnerships

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**Abstract:** The objective of this research is to provide a framework for the selection of a privatization project and the support of a system of decisions. An analysis of 21 articles from 2001 to 2016 were carried out. The results indicated that PPPs is a tool to assist governments of countries with a limited or available budget to perform their duties in the provision of their services. PPPs may have access to financial markets, either by a combined allocation between government and private enterprise or by private financing in full. The develop of a structure with DSSs, generate a competitive advantage in terms of PPPs transitions. The experience with the DSSs offers an advantage with the decision making and in turn allows an interactive contact with its citizens.

**Index Terms:** Contracts, Decision Support System, Government, Organizational Projects, Public-Private Partnership, Research.

## 1 INTRODUCTION

THE Public-Private Partnerships are a range of forms of association, such as in municipal or governmental activities around services or consultations [1]. The contracts that are not adequately developed lead to a loss of time and excessive costs in the execution of the project, caused largely by the unscrupulous behavior of some private sector companies [2]. In turn, the government sector must understand that not all contracts have elements that are of commercial interest [3]. During the recruitment process, some governments use DSSs model [4]. There are a variety of systems that assist in decision making, such as those created for cash flow forecasting and project financing scheduling [5]. This system has become an extremely valuable tool that helps government representatives select companies to hire [2]. The degree of certainty as in the prediction of cash flows are important advances for the financing of projects and the development of a large infrastructure [5]. The use a DSS model, it is related to PPPs [2]. These alliances are not a common method of public procurement in the short term, rather it is a long-term contract to take control and management of a government infrastructure or services [1]. The field of financial decision making, it is developed using modeling mathematical algorithms [5]. The model to be used could provide a better understanding of the most appropriate needs and providers [2]. A government that privatizes a service, it must have a support system for decision making [3].

The development of the system helps in the creation of a mutually beneficial contract for both the government and the private sector [2]. Any uncertainty or risk related to the contract should be evaluated by creating a framework of operations to follow, commitment, responsibilities, payment mechanisms and penalties for failure to comply with what was agreed [1]. As a tool can be used through the web to conduct experiments that offer the possibility of monitoring decisions as if they were private sector companies [2].

## 2 RESEARCH OBJECTIVE

The objective of this paper provides a reference framework and understanding the process for the selection of a service privatization project [14]. On the other hand, identifying the best practices for the application of decision support systems in organizational projects.

## 3 PROBLEM RESEARCH

The few benefits obtained through contracts and without much elaboration are the order of the day to favor a political class and companies that could reach large sums of money [11]. Governments face future challenges, innovative approaches to data management that are increasingly large [12].

## 4 REVIEW OF LITERATURE

### 4.1 Public-Private Partnerships

The literature has several explanations about PPPs [2]. If a government institution wishes to adopt the PPPs model, it must have a well-defined North in terms of the services it wishes to contract, be aware of the required specifications, available funds and legal scope [6]. There are additional elements that cannot be overlooked as detailed technical information of the project [7]. All parties to the contract want something in common, the exploitation and success of the project [6]. The PPPs is defined the PPPs as a long-term contract between the public and private sectors, taking the private sector control of all issues in the development and management of government infrastructure [2]. Before writing a contract, the opinion of experts in the field, the available literature and the approval of government agencies involved in the review should be reviewed [1]. The term PPP is the way to use private sector resources in a subcontracted and privatized way [2]. One of the principal issues in public-private partnerships is to have the knowledge of how to create a contract capable of forging a fruitful business relationship

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between the public and private sector [7]. The PPPs can cover the delineation, construction, financing, operation and maintenance of public infrastructure [2]. The proposed DSSs model can assist in achieving more profitable terms and incorporating key indicators for selection [8]. The PPPs reaches a negotiation with a contract between public and private entities with resources, risks, and compensation [2]. One method is designed when used in a dual way can predict the possibility of approval of developers [8].

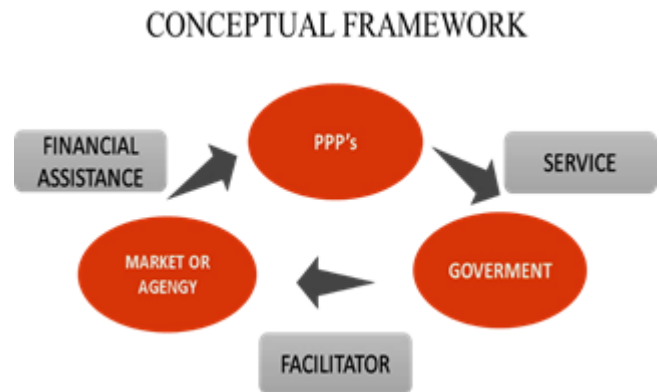
#### 4.2 Decision Support System

The concept of a DSSs was raised between 1950 and 1960, through research conducted at the Carnegie Institution of Technology, Pittsburgh, Pennsylvania [9]. Even though early research began several decades ago, the inconvenience persists, which are characterized using secondary systems involving a high range of uncertainty [12]. These subsystems create much uncertainty in costs, set of techniques and revenues [9]. The review on the DSSs, observes how governments adopt this concept [10]. The DSSs has evolved in two types of computer supports; In the Management Information System providing reports for the required needs and database consulting, the second support is related to the option of examining a database [15]. The various PPPs projects and their management in the privatization process are investigated [14]. The DSSs has elements such as; Process-based systems assisting in decision-making, decision support, interactive access, and data models and analysis [15].

#### 4.3 Decision Support System in the Public-Private Partnerships

Exist innumerable mechanisms, algorithms, methodologies, to develop an effective mechanism that allows to perfect evaluations regarding privatization [14]. In the design of the DSS's be consider numerical and non-numerical elements of importance in the selection of a privatization project [15]. The available of graphs from a DSSs allows valuable analyses [14]. The implementation of a comfortable system in its use of DSS and easy to understand is possible [16]. The commercial opportunity that a captive market like the government can offer should be considered when entering a PPPs [17]. It is estimated that PPPs will continue to be an essential tool for policy implementation [16]. Growth may be associated with the refocusing of public administration due to large government debts [18]. Governments can access new sources of income to meet their fiscal obligations through this process [16]. Governments should have a more disciplined management of public assets [19]. Management is improved by having a clear perspective on the use of funds while maintaining control of finances [16]. Once the decision is taken to contract services as part of the process of preparing a PPPs contract, legal changes must be presented [20]. Government efforts would be properly directed at obtaining a contract with the PPPs, it is possible [19]. The design of the structure, contracts, and other elements must be suitable sets to handle [20]. A well-developed structure probably facilitates the raising of capital for project financing [20]. At the international level, there may be obstacles to the handling of foreign exchange, the type of currency to be used to guarantee payments should be clear in contracting [20]. It is estimated that PPPs will continue to be an essential tool for policy implementation [16]. It is essential to identify and examine risks in a rational way [20]. Growth may be associated with the refocusing of public administration

due to large government debts [16]. The project must be one of profitability to have real options in the markets [20]. Governments can access new sources of income to meet their fiscal obligations through this process [16]. The profitability of a specific market offered to PPPs is an essential consideration for private companies [19]. There are major hurdles that create uncertainty about earning income [20]. In many cases, the monopoly beyond being a public good requires a performance [19]. The company that holds the PPPs contract can minimize the risk using a DSS [20]. Also, consulting firms with experience in hiring PPPs can be hired to provide a financial accessory to bidding companies [19].



The figure of the end page presents the conceptual framework of this review, we begin with a governmental proposal to the international markets that in a country exists the intention to privatize a service that is in a monopolistic market controlled by the government [19]. Through international markets, companies that wish to contribute for these services take notice by making a request to the facilitator and in turn because they can assist in financing [17]. The company that wants to quote for that proposal must submit its request to the agency or private entity as in this case [19]. Once the PPP is selected in the international market, wants to have a part and finance the work directly or in combination with city or government funds, then the government receives its service [16].

## 5 FINDINGS AND CONCLUSIONS

The governments using DSSs use them for various purposes [13]. In other jurisdictions such as the United States and Europe, government entities have had to be effectively managed PPPs [21]. The develop of a structure with DSSs, generate a competitive advantage in terms of PPPs transitions [17]. The experience with the DSSs offers an advantage with the decision making and in turn allows an interactive contact with its citizens [13]. Technological advances allow us to facilitate management processes [13]. Governments that come from first-tier countries have economies that are in transition because of the new opportunities available to firms [17]. Most PPPs may have access to financial markets, either by a combined allocation between government and private enterprise or by private financing in full [16]. Countless companies are interested in managing a government-controlled monopoly on revenue that can be generated [19]. In addition, there is another type of market access that can be beneficial as the acquisition of low-cost funds, bonds [16]. PPPs is a tool to assist governments of countries with a limited

or available budget to perform their duties in the provision of their services [4].

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