

# A MODEL FOR SELECTION, AWARDING, AND MONITORING OF PPP PROJECTS IN DEVELOPING COUNTRIES; HEALTH CARE FACILITIES IN COLOMBIA

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**ABSTRACT:** Private participation on public infrastructures projects is being promoted by governments of several developing countries, among them Colombia. As a result, several advantages such as service delivery efficiency, technology application and faster execution of the projects have been recognized. Hence, the Colombian Government is looking for schemes that allow the private investment in projects like hospitals, schools, prisons and public edification. In this paper, experiences in PPP from other countries were analyzed and adjusted to the Colombian environment. As a result, a model adapted to Colombia is presented, based on a well-developed case from Spain. The awarding process is defined by economic criteria, previous compliance of minimum technical exigencies. Once the infrastructure is operating, contractual periodical payments will be done, based on the performance of the facility.

*Key words:* Social infrastructure, public-private partnerships (PPP), investment, awarding and monitoring, medical service, no medical service.

## 1. INTRODUCTION

Governments from many developed countries have experienced the need of incorporating the resources and participation of the private sector to provide public services. As a result, the development of projects by public-private partnerships has taken great relevance lately (Vasallo & Izquierdo, 2010). Private sector has showed better capacity to provide public services with efficiency and quality due to the necessity of integrate the risk management in the planning process (Van der Geest & Nuñez, 2011). In addition, the private capital funding is the appropriate instrument for governments with fiscal deficiencies and great necessity for investment in public infrastructure (FOMIN, 2010).

The public-private partnerships have been implemented in Colombia after the adoption of the Politic Constitution of 1991, which settled the basis for the private participation in provision of public services. With this approach, successful projects have been developed under the figure of Concession, among them, roads, ports, airports, power supply and transmission, and sanitary facilities. Other projects like prisons, hospitals and schools are developed by public works contracts, and its operation is responsibility of public entities. Private sector involvement is required in the construction of social infrastructure and the delivery of its related services, in order to obtain the benefits of efficient management (Conpes 3615, 2009). Hence, the proposed model is expected to be a starting point for the development of new hospital infrastructure in Colombia..

The term “public-private partnerships” (PPP) has many definitions. In all cases, it implies a long-term relationship between a public entity and a private corporation, with the objective of providing a public service, subject to compliance of quality and performance standards. Public investment is involved with the payment of a monetary compensation during the contractual period. All PPP implies an adequate risk estimation, quantification and allocation among the public and private parties to guarantee a successful project implementation.

## 2. INTERNATIONAL EXPERIENCES

The most advanced scheme in public-private partnerships is found in the United Kingdom, and is denominated Private Finance Initiative (Hinojosa, 2010). Based on this experience, many countries have adapted the lessons learned from the UK in their own initiatives for private participation in infrastructure developments. The Project Finance Initiative introduces the concept of *value for money*, which is defined as the result of compare the present value from all the risk adjusted costs of a traditional project with the present value from all the risk adjusted costs of a PPP project. If the latter is the smallest, is understood that the PPP generates value for money to the public entity.

In Latin America, the term *concession* is widely used, regardless if the project involves public resources or not. Probably, the major development of PPP is found in Chile. In fact, the Chilean experience incorporates productive sectors (roads, airports, hydraulic facilities, railways, ports, aqueducts, sewers) and social sectors (hospitals,

prisons, public edification) in PPP projects. An important number of foreign consortiums participate actively, and it is the capital markets (mainly private pension funds) through fixed income instruments the main source of funding (Hinojosa, 2010).

Spain has been another country with major use of the public-private partnerships for the development of infrastructure projects. In fact, its experience dates from the second half of the XIX century, when the first legislative framework for the public-private partnerships was created (PIAPPEM, 2009d).

Spain has a strong normative and institutional framework for the public-private partnerships implementation. As a result, a significant number of projects have been developed, both in productive and social infrastructure. An important factor is that not all PPP projects must demonstrate value for money, because this concept loses utility when infrastructure is required, but public funds are insufficient for the traditional contractual development.

### 3. COLOMBIAN ENVIRONMENT

The connection of private capital to the development of public infrastructure projects is widely known and explored in Colombia (Hinojosa, 2010). The Constitution of 1991 allow the private participation on infrastructure and utilities projects, since then, laws and decrees that started and regulates the different PPP schemes have been issued.

The Conpes Document 3615 (Initiative for the Modernization and Management of Public Fix Assets) from 2009, a formal characterization of what are the public-private partnerships in Colombia was established: *“is a general typology of public-private relationship materialized on a contract between a public organization and a private company for the provision of public goods and its related services on a long-term context, indistinctly financed by time deferred payments from the Government, from the users or from both sources. This partnership results on risk retaining and transference, rights and obligations for both parties, payment mechanisms related to the availability and level of service of the infrastructure and/or service, incentives and deductions and, in general, on the establishing of an integral regulation of the quality standards of contractual services and key compliance indicators”*.

According to this document, under a PPP contract the private sector can finance, design, build or re-build the necessary infrastructure (i.e. schools, hospitals, prisons) for the provision of a public service (i.e. education, health, custody) and be responsible for providing all services related to the management and maintenance of that infrastructure for the duration of the long-term contract. On the other hand, the public sector retains the responsibility of provide the public services, and pays to the private for the provision of them, related to the infrastructure (not only for the construction) as long as

the quality of services complies with the agreed requirements.

A new law issued in 2012 (Law 1508) allows a normative framework specific for the public-private partnerships in Colombia, complementing widely the Statute for Public Procurement (Law 80), which was focused to the goods and services acquisition. According with the National Planning Department (2011) Law 80 presented the following limitations:

- It was paid for construction, and not for the services provided for the infrastructure.
- Equity was not associated to the projects and an efficient risk and resources allocation was not clear.
- The Government provided a large amount of resources in concession projects (including advance payments) that made no difference with public construction, and as a result some PPP projects were more expensive compared to traditional delivery methods.
- There was not a difference between those who financed and those who build. The projects were no designed for institutional and financial investors (DNP, 2011).

Under the Law 1508 of 2012, *“the PPP are an instrument for private equity participation, that is materialized on a contract between a public corporation and a natural or legal person from the private sector, for the provision of public goods and its related services, that involves the retaining and transference of risks among the parties and payment mechanisms subjected to the availability and level of service of the infrastructure and/or service.”*. As shown in this definition, there are new schemes to compensate the private sector: performance and infrastructure’s availability.

The public-private partnerships in Colombia are widely used on transportation and electric energy projects where the users pay for the services provided. Since 2010, the government has actively promoted the participation of private investment in those sectors where the State delivers services, i.e., hospitals, prisons, schools, etc.

The National Planning Department, with the Ministry of Finance and Public Credit, have established six general phases in the implementation of a public-private partnership project, which are widely described in the Guide of good practices for the execution of PPP projects (Ministerio de Hacienda y Crédito Público, Departamento Nacional de Planeación, 2012).

### 4. MODEL FOR THE SELECTION, AWARDED AND MONITORING OF A PPP PROJECT ON HEALTH CARE FACILITIES

A scheme for the implementation of a new hospital by public-private partnership is presented below. Assuming that the social-economic evaluation demonstrated the necessity of the project and according with the criteria defined by the current legislation, the project can be implemented once it is verified that it generates value for

money. The following recommendations are based on documentation about worldwide success cases, particularly from Spain, adapted to the current Colombian environment and applicable to the phases IV and V.

#### **4.1. Bidding and awarding process**

According with the Guide of good practices for the execution of PPP projects, once the public entity has the required legal permissions, it will start the process of promoting and selection of the private company which will execute or rehabilitate and operate the project. It is supposed that all studies realized to this point by the public entity have shown the viability of the project for the private, in terms of return on investment.

The same Guide recommends to the public entity to account for every project with a specialized supervision, in each of the phases of the project, which must be renewed by periods of five years. The next section considers that this supervision is verifying that the private company is fulfilling all the requirements to guarantee a successful execution and operation for the project.

##### **4.1.1. Pre-qualified List**

Studies developed by the public agency and a consulting firm during the structuring phase (phase II), will allow to know the market and the proper technical and financial offer for the requirements of the project. At this stage, it is important to have a short list of potential bidders willing to participate in the bidding process and develop the project satisfactorily according to their history, reputation, and experience.

##### **4.1.2 Interest Expressions**

Interest expressions are a very useful and simply mechanism for the public entity, so that allows knowing how have reacted the potential proposals to the concerned project. Additionally, in this first stage realizes a filter based on the list of pre-qualified list, minimizing the risks of failure by adjudication to a limited-capacity proponent to face the exigencies of the project. The pre-qualification of bidders by an interest expression request is fundamental phase in the formal bidding process for projects financed for The World Bank and the Inter-American Development Bank, and is an important previous step for the study of marketing and capacities for a firm interested to take part in the following phases of the bidding process (González-Berenguer, 2011).

##### **4.1.3 Specifications and Bidding Documents**

Well defined specifications and bidding documents are essential to elaborate a reasonable proposal that will satisfy the expectations of the public entity and maximize the value and benefits for the users/public. The bidding documents must be designed to provide the maximum amount of information to allow the companies interested in the project structure a responsible proposal, so the public entity can compare all the proposals in order to determine the best of them. The bidding documents should reflect the reliability on the project structuring by

the public entity and its consultants. The bidding documents must establish the institutional and legal framework, the scope, the participation requirements, the awarding criteria, the payment's mechanisms and all the other information which public entity considers necessary for the project development. The next sections will define basic criteria related to the main sections in the bidding documents:

##### **Scope**

Projects must be awarded based on the functional requirements of providing the services associated with the type of facility and under international quality standards (i.e. for a hospital: number of available beds, minimal area for each bed, illumination requirements, number of intensive care units, etc.). The contractor must have the flexibility to comply with the functionality and quality requirements through an optimization process of the designs, materials, and maintenance processes.

The scope of the contract must be as clear as possible, so the contractor will know in advance the criteria used for the supervision team to validate the economic compensation once the services have been provided and the infrastructure has been available. The scope must include:

- i) The elaboration of detailed designs for construction, subject to the verification and approval of the supervisor.
- ii) Equipment and furniture provision required for the service areas and the operation of any commercial zones.
- iii) The operation routines for the commercial exploitation, which will generate revenues for the private party.
- iv) The specifications for the provision of non-medical services (operating and maintenance) during the contract term. Some of these services are: general cleaning; security; restoration services; maintenance services; waste management; access roads and gardens conservation; laundry service; clinic and administrative documentation file management; sterilization service; pest transportation services and ambulances; store management, logistics, etc.

##### **Schedule Milestones**

Milestones must be defined during the technical and financial structuring stage. Given that some payments will be subordinated to the infrastructure's availability in order to create an incentive for early completion, the contractor should consider these dates in its financial model. These milestones are also associated to bonuses and penalties for early or late completion.

##### **Risk Allocation**

The success for a PPP initiative is mostly based on an adequate risk allocation among the public and private parties. The main principle in the Value for Money approach is the determination of risk adjusted costs for both the traditional procurement system and the PPP project.

The risk allocation process should consider the project's environment. For instance, the risks involved in a building construction in an urban environment are not as relevant as in a road project where the environmental requirements are essential for successful project completion. In Colombia, the experiences learned in the past two decades have helped to clarify the risk allocation process and in most of the projects it is clear which party is responsible for each phase/activity. Those experiences in concession roads are now applied for the advancement of PPP for social infrastructure, which is the new frontier for the Colombian government in order to provide better services and coverage for all the population.

**Awarding Criteria**

The evaluation of a bid and its awarding must follow a clear and noncontroversial process, including fair conditions for international companies interested in the PPP market due to their experiences in other countries. If

protectionist policies are implemented the benefits of international participation will not be exploited, and probably the best services to the users will not be offered.

The awarding process must be subordinated to the compliance of minimum set of financial, technical and experience requirements that supports the presentation of interest expression. After that, the offers must be evaluated based on requirements defined in studies performed by the public entity on the structuring stage. Based on findings from other countries and due to the fact that PPP for social infrastructure is new in Colombia, it is recommended awarding based on to the least fee requested by the private operator assuming the availability and high quality of the services provided verified by the supervision team subjected to the strict compliance of quality standards and technical and experience requirements. Some awarding criteria that have been used in other countries are presented on Table 1.

**Table 1.** Proposed adjudication criteria. Source: own elaboration based on PIAPPEM (2009c).

Awarding Criteria		Incidence	
1. Financial Bid		60	
	Maximum Periodic Payment Requested (MPPR)		30
	Consistency and integrity of the financial structure		15
	Percentage of MPPR susceptible for functioning and quality deductions		15
2. Provision of Services Bid		40	
	General cost of providing services		10
	Individual cost of each service		30
	Total	100	100

The Economical proposal refers to the periodical payment (monthly, semiannual or annual) defined by the public entity to be paid to the contractor once the infrastructure is providing complete services. In this sense, the maximum periodic payment solicited will be evaluated in relation to a value defined by the entity based on its own studies; the coherence and integrity of the financial structure (debt and equity) will be evaluated by the entity based on criteria established by experts; and the percentage of the Maximum Periodic Payment Requested (MPPR) susceptible for decrease will be evaluated considering the optimum value defined with the previous studies. It is important to note that the MPPR is formed of a fix amount and other variable, which will reflect any deductions caused by availability or quality

deficiencies. The fix amount will be defined by the financial analysis conducted by the contractor and usually this value is defined to cover the debt payment, O&M expenses, and profits.

The offer of nonmedical services refers to the payment that the contractor requests to the public entity for supplying other services such as infrastructure operation.

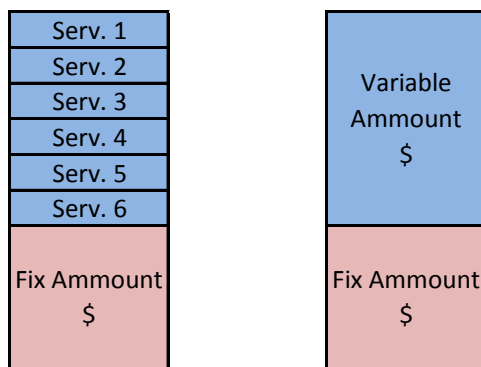
This value consists of a general cost (which may be the management of all services) and a sum of individual costs of each service provided. The non-medical services offer will be evaluated based on studies conducted by the entity through the consulting firm that supports the structuring phase.

## 4.2 Monitoring, Supervision and Payments

The supervision entity will be responsible for ensuring and monitoring the quality of services provided by the contractor. If the contractor fails to fulfill the quality standards, it will be penalized with a reduction of the periodic payment. The recommendations below are based on PIAPPEM (2009c).

### 4.2.1 Payment Mechanism

The payment to the contractor shall be for availability of the infrastructure, subject to compliance with standards when providing non-medical services, and compliance with quality standards. It consists of a maximum periodic payment requested by the contractor in its proposal (MPPR) and this value is usually an annuity. The MPPR will be adjusted annually according with inflation. The Figure 3 illustrates the composition of periodical payment.



**Figure 1.** Maximum Periodic Payment Requested (MPPR) composition.

#### *Fixed Annual Amount*

The fixed annual amount corresponds to a cost that the public must recognize for the private effort to materialize the infrastructure. This value depends from the financial analysis, and must be major to the required value for the debt payment. It will not be susceptible to deductions of any type.

#### *Variable Annual Amount*

The other part of the MPPR corresponds to a variable amount, which represents a sum of the cost of each service that the contractor provides, and which maximum value is represented as a percentage of the MPPR. This maximum value implies the functioning of all the solicited beds and an optimal level of service. It must correspond to the sum of the periodic cost of each service provided by contractor to ensure the availability of infrastructure.

Optimum availability is limited by failures in provision of services; in this way, as failures occurs deductions will be done in accordance with criteria settled on contract documents. Some of these are illustrated in section below.

### 4.2.2. Payment Deductions

Deductions will be made on the individual cost of the services comprising the annual variable amount,

according to predefined failures that may occur and affect the quality and/or availability of services. These failures must be detected and registered by the supervision entity, and discounts will be weighted according with the hospital area and category of service. It is understood that all service or quality failures that may occur during the operation, together with their classification, response and correction times, should be clearly defined in the contractual documents. In the Majadahonda Hospital, illustrated on PIAPPEM (2009c), these deductions have three different components and are proposed to use in Colombia:

- i) Category of service or quality failure.
- ii) Response time to the failure.
- iii) Correction time to the failure.

#### *Services Failure Categories:*

Service Failure 1 (SF1): those that leave inoperative and impede the use of all or part of a functional area of the hospital.

Service Failure 2 (SF2): those that affect operability but not impede the use of all or part of a functional area of the hospital.

Service Failure 3 (SF3): serious failures that may or not affect the operation of part or all of a functional area in the hospital, and that clearly breaches any requirement specified in the contract documents.

Service Failure 4 (SF4): no serious failures that may or not affect the operation of part or all of a functional area of the hospital and that clearly breaches any requirement specified in the contract documents.

Service Failure 5 (SF5): failures that are not attributable to the performance of the contractor, but have not been addressed in the response time and time of rectification.

#### *Quality Failure categories:*

Serious Quality Failure (SQF): those that affect the quality of services, and all failures in providing services that are not defined in the contract, but which involve a breach of current regulations applicable to service.

Medium Quality Failure (MQF): medium or low failures that affect the quality of services, and any failure in the provision of services not defined in the contract which produces a significant impact on services of a functional area of the hospital.

#### *Response Time to Failure:*

Refers to the established time for the contractor to response immediately with the solution of the failure, or take the necessary steps to correct it. Since all failures do not have the same impact, different response times are established:

Response Time 1 (RT1): high urgency situations, 5 minutes.

Response Time 2 (RT2): medium urgency situations, 30 minutes.

Response Time 3 (RT3): low urgency situations, 1 hour.

Response Time 4 (RT4): accorded time with supervisor.

Response Time 5 (RT5): Not applicable.

**Correction Time:**

Is the defined time for a failure, in which contractor must address the necessary steps to solve it. Two types will be:

Type 1: Not applicable.

Type 2: Determined time.

The service or quality failures can be applied to each of services provided by contractor and its direct effect will affect the regular rate requested to provide the service in optimal conditions. Some deductions to the fee of each service in terms of the three failure components are presented on Table 2.

**Table 2.** Failure deductions. Source: PIAPPEM (2009c)

Failure deductions (% Service Fee)						
SERVICE	Failure Category		Response Time		Correction Time	
	Type	%	Type	%	Type	%
	SF 1	0.166%	1	0.125%	1	0,035%
	SF 2	0.066%	2	0.050%	2	0.000%
	SF 3	0.025%	3	0.019%		
	SF 4	0.007%	4	0.005%		
	SF 5	0.000%	5	0.000%		
QUALITY	Failure Category		Response Time		Correction Time	
	Type	%	Type	%	Type	%
	SQF	0.043%	1	0.023%	1	0.019%
	MQF	0.014%	2	0.013%	2	0.000%
			3	0.003%		
			4	0.002%		
			5	0.000%		

Percentages showed on Table 2 are illustrative. These are the used in Majadahonda Hospital, presented in PIAPPEM (2009c). These deduction percentages must be determined from a financial analysis to establish the cost which determined failure in providing services causes to the public entity and users.

**Weight of failures by hospital areas and category of service:**

According to the impact that failures may have in different areas of the hospital, it is necessary to establish

weights to increase the failure deduction, depending on the incident area and/or importance of the service which failures. Weights used in the Majadahonda Hospital are showed below, as an illustration. For the possible application on a project in Colombia, the weights should be determined by objective analysis and must be specified in the contract documents.

*Hospital Areas*

Very critical areas have a weighting factor of 1.0500 and between them we have:

Operating rooms, resuscitation and post-surgery awoken units; maternity wards; special units: radiology, radiation, oncology, etc.; isolation rooms; sterilization: ICU; emergency room; blood bank; hemodynamic; dialysis; nuclear medicine; coronary care unit.

Critical areas have a weighting factor of 1.0375 and between we have:

Radiology; laboratory; endoscopy; pathology; rehabilitation; outpatient; preventive medicine; pulmonology; obstetrics; ophthalmology ordinary inpatient areas.

Protected areas where patient procedures are not performed will have a weighting factor of 1.0250, and among these we have:

Kitchen; staff cafeteria; public cafeteria and food store.

Other areas where procedures are not performed will have a weighting factor of 1.0125 and these are:

General administrative areas; supply service; admission service and attention to the patient service.

The areas for clothing; toilet; workshops; warehouses; roads and exterior will have a weighting factor of 1.000.

#### *Categories of services*

Services provided by the contractor have relative importance in the hospital operation, thereby they are categorized. The categories used in the Majadahonda Hospital are as follows:

Medium (weighting factor: 1,0250). Among these we have the following: maintenance of roads and gardens; warehouse management; logistics and inputs supply; management of staff receiving, information, extern consultation and PBX, management of clinical documentation and file management

High (weighting factor: 1,0500). Among these we have the following: general cleaning; integral security; restoration management; maintenance management; common and hospital waste management; laundry service; full sterilization service; pest control service (insects, rats and mice); internal and external transportation service and ambulances.

The fee deductions for quality or service failures can be made about the equivalent monthly cost of provided services, but will be effective in the annual payment

## 5. SUMMARY

Colombia has no developed a PPP project in hospital infrastructure thus far. Indeed the government is now creating the right environment to promote PPP for social infrastructure. And it is looking for schemes that allow the private participation on these projects, and other social infrastructure projects. This work presents a scheme that it has been proposed based on a success project from Spain and the considerations included in the Law 1508. However, this proposal must be revised and complemented by experts in the hospital operation in

Colombia, principally to define and categorize the failures and times to response due to the local conditions which are different compared to Spain. The impact of failures must be defined in terms of costs, in order to establish the percentages to reduce the payment for the contractor.

Once the scheme is completed it could be presented to public entities as Health Ministry and National Planning Department, looking for its consideration and implementation. On the other hand, under the framework of the recent PPP law in Colombia, the scheme may be presented to these entities as a private initiative to develop a hospital. This model can be used not only to develop a new project, but either to execute programs to modernize and improve the quality of the services in many existing public hospitals.

Projects based on this scheme could have difficulties in its implementation, due to the natural resistance to changes in all organizations. It is necessary a strong politic willingness to execute this processes and face all the challenges that may arise. The benefits are clearly defined and proved in many countries that have implemented PPP projects: efficiency in the use of resources; quality in the provision of medical services; reduction in construction duration; reduced corruption risks by replacing for a single public contract all those necessary for construction, operation and maintenance for long periods of time; application of state of art technology, among others.

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