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Public-Private Partnership in the Construction of Infrastructure Projects In turkey

الشراكة بين القطاعين العام والخاص في بناء البنية التحتية

مشاريع في تركيا

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Abstract:

The aim of this study is to highlight one of the world's leading experiences in strengthening and strengthening its infrastructure by relying on public-private partnership, The study found that turkish experience in infrastructure is one of the most successful global experiences So that the partnership contributes to the completion of many public infrastructure and improvement And achieve the development goals, By concluding Government Deals with the private sector that allow the completion and modernization of infrastructure, and the improvement of the quality of service, and Turkey is one of the developed countries in this partnership in terms of volume of investments on the one hand, and the strength and effectiveness of infrastructure on the other

Keywords: Public Private Partnership, Infrastructure, Partnership Contracts, Giant projects Turkey.

(JEL) Classification : H 54 , H 55.

الملخص:

الهدف من هذه الدراسة هو تسليط الضوء على واحدة من التجارب الرائدة في العالم في تعزيز وتقوية بنيتها التحتية من خلال الاعتماد على الشراكة بين القطاعين العام والخاص .إنجاز العديد من البنية التحتية العامة وتحسينها وتحقيق الأهداف الإنمائية، من خلال إبرام الصفقات الحكومية مع القطاع الخاص الذي يسمح بإكمال وتحديث البنية التحتية، وتحسين جودة الخدمة، وتركيا هي واحدة من الدول المتقدمة في هذا الشراكة من حيث حجم الاستثمارات من ناحية، وقوة وفعالية البنية التحتية من ناحية أخرى.

الكلمات المفتاحية: الشراكة بين القطاعين العام والخاص، البنية التحتية، عقود الشراكة، المشاريع العملاقة تركيا .

رموز jel: H 54 , H 55.

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1. INTRODUCTION:

The theme of public-private partnership In the construction of infrastructure projects has received considerable attention, Given the latter's role in achieving development Especially in developing countries, that's so the existence of infrastructure is necessary for the development of communities, But the investment in them often requires large sums and large budgets, which weakens the ability of the public sector to finance and run these projects, As for

The private sector can not invest in such projects individually , Due to high costs or low returns in some of them, And therefore Public-Private Partnership (PPP) is seen as an input to improving the provision of infrastructure services, Through increased efficiency in project delivery, Operated and managed it, As well Adopting management practices and expertise from the private sector, and This partnership has become increasing dramatically, in both developed or developing countries, And so on To meet the growing demand for infrastructure services in various sectors such as energy, transportation, communications, health and water.

Achieving comprehensive development affecting all aspects of the State requires cooperation between the public and private sectors, , Which is used to accomplish some of the basic projects in key sectors such as transport, health and energy, and This is what Turkey has done in implementing its development programs and plans for the last two decades.

Based on this, the problem of the study is shown in "How successful is the Turkish experience in relying on public-private partnerships for infrastructure projects?

1.1. the importance of studying:

The importance of this research lies in the importance of the partnership between the public and private sectors in the infrastructure projects that will meet the needs of the economies of countries without relying on the general budget of the state, especially in light of the success of this partnership in some developed countries such as Turkey,Where Other countries can benefit from this experience.

1.2. Research Aims:

Through this paper, we aim to:

- Introducing the concept of partnership between the public and private sectors;
- Highlighting the rationale and benefits of public-private partnership;
- Evaluation of the Turkish experience related to public-private partnership in many fields.

2. Public-Private Partnership

2.1. Definition :

There are many definition of Public-private partnerships, Here are some of the definitions that have been used in recent times:

- Canada : a cooperative venture between the public and private sector, built on the expertise of each partner that best meets clearly defined public needs through the appropriate allocation or resources, risks and rewards. (***chapter 1 introduction to public private partnerships, p :03***).
- The set of arrangements "in which the private sector carries out therole of supplier of infrastructure of assets and services that havetraditionally been provided by the governmen. (***public private partnerships in education, 2009,p :14***).
- A PPP is conceptualized as a contractual agreement between one or more governments/public agencies and one or more private sector or nonprofit partners for the purpose of supporting the delivery of public services or financing, designing, building, operating and/or maintaining a certain project for the public good. (***Alexandru, 2015, p :01).***
- ***Public***-private partnerships (P3s) are contractual arrangements between government and a private party for the provision of assets and the delivery of services that have been traditionally provided by the public sector. (Bettigneies and Ross, 2004 , p :136).

2.2. Characteristics of Public-Private Partnerships projects

The important characteristics of ppp projects are : (***Quium, 2011, p :04***)

- Promise of better project structure and design ;
- Allows better screening of projects. A bad project is a bad project no matter whether it is implemented by the public or the private sector ;
- Better choice of technology based on life-cycle costing ;
- Better service delivery, especially if performance based payment is considered ;
- Better chances of completion on time and within the budget.

2.3. Motivation for Engaging in Public-Private Partnerships

1. The main needs that motivate governments to enter into PPPs for infrastructure are: (***Nathan Associates,2017, p :12***)

- To Complete Projects OnTime and Within Budget ;
- To Increase Market Efficiency by Proper Allocation of Risk ;
- To Ensure Greater Service Coverage for Users ;
- To Lower Tariffs ;

- To Increase Foreign Investment in the Country ;
- To Promote Monetisation ;
- To Provide Better Quality of Service ;
- To Reduce Maintenance Costs ;
- To Access Improved Technology and Innovation ;
- To Ensure the Optimisation of Resources.

2.4. Advantages of Public-Private Partnership

Among the advantages of Public-private : (Virginia, Allen & Overy , 2012, p :06)

• Investment decisions under PPP contracts tend to be based on a longterm view rather than short-term concerns ;

• Risk and work are transferred to the party which is best able to manage it at the least cost, achieving best value ;

• Projects go through a competitive pricing process, meaning that the cost of public services is benchmarked against market standards. Shareholders' Agreement Sub contracts Concession Agreement Loans Security Sponsors Construction Contractor FM Contractor Project Company (SPV) Public entity Lenders Direct Agreements ;

• The timings and costings tend to be more certain and therefore deliver better value for money. Where PPPs are not completed to budget, the private sector usually bears the costs ;

• The cross-transfer of public and private sector skills, knowledge and expertise can create innovation and efficiency ;

• The private sector often brings with it greater construction capacity, labour capacity and resources than would be available to the public sector ;

• Payments to the private sector in PPP projects are usually linked to how they perform, creating incentives and efficiency ;

• PPP projects are not subject to political interference and deferred payments for the government.

2.5. Public-Private Partnership Models

There are a number of different types of PPPs in existence : (Sohail and Cavill, 2010, p :393)

2.5.1 Service Contracts : Under a service contract, the government pays a private entity to perform specific tasks. Service contracts are a long-established practice used for routine operations (meter reading or leak detection), engineering works, and the laying of pipelines.

2.5.2 Management Contracts : Management contracts are contractual agreements between the government and a private partner under which the private partner is given the responsibility for day-to-day management of an enterprise in exchange for a fee; the government, however, retains financial and legal responsibility for delivery of services. These are arrangements in which a municipality or local government purchases management services from a company.

2.5.3 Leasing or Affermage Contracts : Under this model, the government delegates management of a public service to a company in return for a specified fee, commonly based on the volume of water sold, while ownership of assets remains with a holding company operating for the government.

2.5.4 Concessions Contracts : This arrangement usually gives the concessionaire (the owner or operator) a monopoly service provision for a fixed period of time, during which the concessionaire also assumes any significant investment risk. The model of large concessions has worked in some places, but its suitability to most developing countries has been questioned.

2.5.5 BOT(Build Operate Transfer) Contracts : contract with a private sector contractor to design , build and operate a puvlic facility for a defined period, after which the facility is handed back to the public sector. The facility is financed by the public sector and remains in public ownership throughout the contract. Key driver is the transfer of operating risk in addition to design and constraction risk. (***Yong, 2007, p :10***)

2.6 Some statistics on public - private partnership projects at the global level during the period 1990-2018

The number of public-private partnership projects funded from 1990 to 2018 at the global level amounted to 7206 projects worth 1788.22 million dollars, with East Asia ranked first with 2243 projects valued at 429.46 million dollars and Latin America and the Caribbean with 2,110 projects valued at 659.77 Million dollars, in South Asia with 1270 projects worth 296.11 million dollars, Europe and Central Asia with 902 projects valued at 270.53 million dollars. The Middle East and North Africa region ranked last with 204 projects valued at 59.30 million dollars, as shown in table (01) :

Table (01) : regions ranked by number and inverstment during the period 1990-2018

Region	Number of projets	Region	Value (million $)
East asia and pacific	2243	**Latin america and the caribbean**	659.77
Latin america and the caribbean	2110	**East asia and pacific**	429.46
South asia	1270	**South asia**	296.11
Europe and central asia	902	**Europe and central asia**	270.53
Sub-saharan africa	477	**Sub-saharan africa**	72.95
Middle east and north africa	204	**Middle east and north africa**	59.30
Total	7206	**Total**	1788.12

Source: Prepared by researchers based on : World Bank, Public and Private Investment Project Data,(http://ppi.worldbank.org)

As for the Number of public-private partnership projects financed during the period from 1990 to 2018 by sector, The electricity sector ranked first with 3501 projects valued at 893.39 million dollars, the roads reached 1024 projects valued at 298.73 million dollars, water and sewerge with 1019 projects valued at 84.05 million dollars, The railways sector ranked last with 140 projects valued at 120.95 million dollars, as shown in table (02):

Table (02) : primary sectors ranked by number and investment during the period 1990-2018

Sector	Number of projets	Sector	Value (million $)
Electricity	3501	**Electricity**	893.39
Roads	1024	**Roads**	298.73
Water and sewerge	1019	**ICT**	121.12
ICT	524	**Railways**	120.95
Ports	457	**Aiports**	105.37
Natural gas	372	**Ports**	86.87
Aiports	171	**Water and sewerge**	84.05
Railways	140	**Natural gas**	78.52

Source: Prepared by researchers based on : World Bank, Public and Private Investment Project Data,(http://ppi.worldbank.org)

3. Turkish experience of public-private partnership

Turkey is one of the first countries in the world which developed its own PPP legislation. With the Law numbered 3096 from 1984 the private sector involvement specifically in to power plants projects was allowed. But the first concrete step in the world to apply the PPP models has been taken in UK by establishing the "PFI-Private Finance Initiative" in the year 1992. Parallel to this, in Turkey has enacted in 1994 a general law for BOT, the Law number 3996, for different infrastructure areas like transportation, energy and water supply and treatment. On this legal basis, first implementations of PPP projects in Turkey came on agenda and several projects, mainly for electricity production, drinking water facilities have been realized as BOT and later as BO projects. In the energy sector, between 1995 and 2001, thirty power plants with a total capacity of 8500 MW – equaling nearly one fourth of Turkey's power production capacity have been completed under the BOT and BO models. (Ali, 2010, p01)

Table (01) shows the major active PPP laws :

Table (03) : PPP Laws and Models in Turkey

Law number	Year of enactment	Model	Definition
3096	1984	BOT, TOR	Authorization the private entities to generate, transmit, distribute and trade electricity other than the Turkish Electricity Administration
3465	1988	BOT, TOR	Commissioning of entities for access controlled motorways (highways) construction, maintenance and operation other than the General Directorate of Highways
3996	1994	BOT	Commissioning of certain investments and services for BOT implementations
4046	1994	TOR	Arrangements for the implementation of privatization and amending certain laws and decrees with the

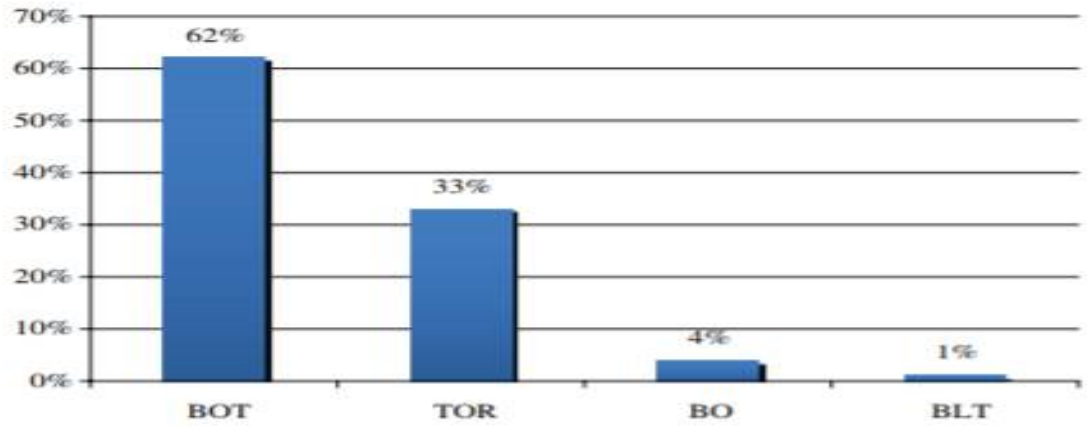
			force of law
4283	1997	BO	Construction and operation of electricity generation plants and regulation of energy sales in the BO model
5335	2005	TOR	Transfer of operation rights of airports and passenger terminals other than General Directorate of State Airports Authority
5396	2005	BLT	Regulation on the construction of health facilities on a lease-and-build basis and the restoration of the services and areas in facilities other than medical service areas on the restore-and-operate basis

Note: BOT: build-operate-transfer; BO: build-operate; TOR: transfer of rights; BLT: build-lease-transfer

Source: Asli Pelin Gurgun and Ali Touran, Public-Private Partnership Experience in the International Arena: Case of Turkeyn, p:04.

And the Figure (01) shows that that BOT contracts are the most used in Turkey in the completion of various partnership projects by 62% of the total of these projects, Followed by another type of contract represented In TOR contracts by 33%, then in BO contracts by 4% and BTL contracts by 1%, which is the lowest ratio indicating that this type is rarely used in partnership projects.

Figure (01) : Distribution of PPP models in Turkey



Source: Asli Pelin Gurgun and Ali Touran, Public-Private Partnership Experience in the International Arena: Case of Turkeyn, p:04.

3.1. The situation of infrastructure in Turkey:

Supplementing its modern infrastructure with world-class projects, Turkey takes the second highest score in the World Bank's Private Participation in Infrastructure Database's (PPI Database) in 2015, Second only to Brazil in the study focusing on 139 emerging countries, Turkey's seventeen new projects, which include the privatization of power plants and the construction of new highways and ports, amounted to an investment volume of USD 12.5 billion (*http://www.invest.gov.tr ,2015*).

During the period 1990-2018, turkey ranked sixth in top ten countries by ppp projects with 224 projects , and got ranked fourth in top ten countries by ppp investment with 143.3 million dollars, as shown in table (04):

Table (04) : top 10 countries by number and inverstment during the 1990-2018

Country	Number of projets	Country	Value (million $)
China	1488	**Brazil**	388.61
India	979	**India**	256.79
Brazil	911	**China**	178.28
Russian	344	**Turkey**	143.37
Mexico	305	**Mexico**	85.19
Argentina	226	**Russian**	72.87
Turkey	224	**Indonesia**	59.92
Colombia	184	**Argentina**	56.24
Thailand	169	**Philipines**	56.07
Peru	153	**Malaysia**	51.85

Source: Prepared by researchers based on : World Bank, Public and Private Investment Project Data,(http://ppi.worldbank.org).

Turkey has a favorable investment legislation for PPP investments that can be realized through various models, such as build operate, build-operate-transfer, transfer of operational rights.. etc, it's investment climate is further strengthened by domestic and international laws that protect investments and provide international arbitration. (Investing frastructure and public private partnershipin turkey, 2018 p :01)
Among the reasons ofTurkey's reliance on partnership between the public and private sectors: (***Sedef, 2017, p :09***)

- complementary and supplementary to limited conventional financing ;
- Helps to attract foreign direct investment ;
- Enhances the quality, effectiveness and efficiency of public services ;
- Facilitates know-how and technology transfer.

3.2. Development of partnership projects in Turkey

Partnership projects in Turkey have developed significantly in recent years, reaching about 224 projects in 2018, and the total cost of projects amounted to 143.3 million dollars in various sectors that provide public services to citizens , The following table shows general information on the public-private partnership in Turkey during the period 2016-2018, as illustrated by the World Bank's Public and Private Investment Project data :

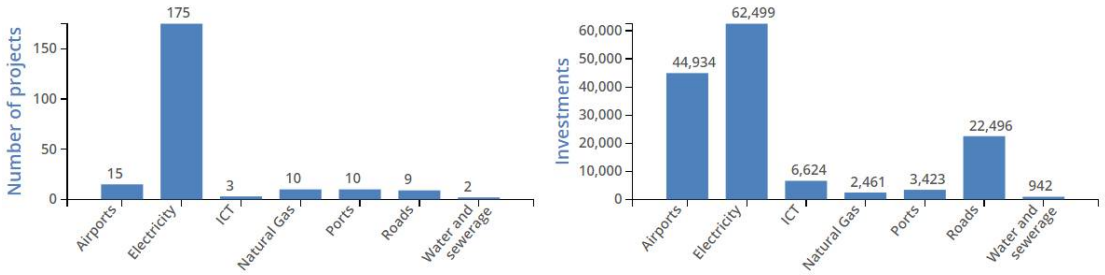
Table (05) : Number and value of investment of public-private partnership projects in Turkey by sector during the period 2016-2018

Statement	2016		2017		2018	
	Number of project	Value (million $)	Number of project	Value (million $)	Number of project	Value (million $)
Airports	15	44.9	15	44.9	15	44.9
Electricity	167	61.6	172	62.3	175	62.5
ICT	3	6.6	3	6.6	3	6.6
Natural gas	9	2.4	10	2.5	10	2.5
Ports	9	3.3	9	3.3	10	3.4
Roads	4	14.7	5	15.7	9	22.5
Water and swerage	2	0.9	2	0.9	2	0.9
Total	209	134.6	216	136.2	224	143.3

Source: Prepared by researchers based on : World Bank, Public and Private Investment Project Data,(http://ppi.worldbank.org)

The following figure summarizes the table data in 2018:

Figure (02) : Number and value of investment in Turkey 's participatory projects by sector in 2018



Source: World Bank, Public and Private Investment Project data, (http://ppi.worldbank.org)

From the above table and figure, the largest number of participatory projects during 2018 includes electricity with 175 projects valued at $ 62.5 million, followed by airports with 15 projects valued at $ 44.9 million, roads with 9 projects and a total value of $ 22.5 billion. And water and sewerage with 2 projects, This shows the interest of the State of Turkey in improving the quality of the public infrastructure and the quality of its services and creating balanced development between different sectors.

3.3. Successful projects in Turkey within the framework of public-private partnership:

Turkey has recorded a number of projects that have achieved a quantum leap in the development of infrastructure and improve the quality of public service provided to citizens in various fields within the limits of the budget and deadlines. There are many outstanding projects and successful, including the following:

Table (06): Successful Participatory Projects in Turkey

Project	Year	Sector	Subtype of PPI	status	Value of investment (million $)
IGA Airports	2015	Airports	BOT	Active	35.6
Gebze-Orhangazi-Izmir Motorway	2013	Roads	BOT	Active	9.8
Malkara-Canakkale motorway	2018	Roads	BOT	Active	2.8
Third Bosphorus	2014	Roads	BOT	Active	2.9

Bridge and Northern Marmara Highway Project					
Ataturk Airport lease contract	2005	Airports	lease contract	Active	2.5
InterGen Gebze Adapazari Izmir	2000	Electricity	BOO	Active	2.2

Source: Prepared by researchers based on : World Bank, Public and Private Investment Project Data,(http://ppi.worldbank.org)

the Researchers sees that The success of Turkey's efforts has been closely linked to the role of the State through institutional arrangements with the private sector, which have had a significant impact on the expansion of public investments, the provision of advanced infrastructure and the growth rates, and through the knowledge of the Turkish experience and the nature of the partnership between the public sector and the private sector on the basis of Professional and standards in the interests of citizens and society, where the public sector worked to provide support to the private sector in providing an environment and an investment environment that boosted the volume of investments and confidence in the public sector.

4. CONCLUSION

Through this study on public-private partnership in infrastructure projects in the light of the successful experience of Turkey we have reached the following results:

- Public-Private Partnership (PPP) contracts are concepts that are of great interest to decision-makers because of the role they play in financing, completing, maintaining public infrastructure projects and allocating part of the risk structure related to the design, financing, operation, As well as benefiting from the experience of the private sector in construction and management, and the ability of the partnership to complete the projects within the budget and deadlines, allowing control of the costs and quality of achievement.
- The construction of infrastructure projects requires large investments and the length of construction and recovery often long, which drives the public sector to undertake to achieve these projects.
- The partnership between the public and private sectors has proved effective in Turkey, where it has relied on several infrastructure projects, mainly energy and transportation.

- Turkey has reached the second rank globally in the volume of partnerships between the public and private sectors within the framework of the development program launched by the Turkish government during the past years, which supported it to achieve a qualitative leap in its economy and trade internally and externally.
- Gave the projects that have been implemented with the private sector a strong boost to the Turkish economy, which has reflected positively on the economic situation of the country, and therefore considered the Turkish partnership model one of the most effective models because it achieve several advantages over social levels, economic and environmental, and can other countries to apply this model successfully.

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