# Project management of road infrastructure in Iraq

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## Abstract

Road infrastructure is one of the main factors affecting the development of the country's economy and has directly contributed to supporting all economic sectors through the provision of logistical support in the establishment of projects The main objective of this paper is to show the importance of road infrastructure and its impact on the Iraqi economy. There are many previous studies that emphasized the importance of road infrastructure and its contribution to achieving economic stability in the case of low oil imports where transport imports for 2015 amounted to 34.3 billion dinars This study was conducted by Iraq because it is one of the countries that have a privileged position in the Middle East and are relying mainly in Iraq on road infrastructure rather than river or air transport infrastructure. So the approach for this paper the case study which was done

The results of this study are that the road infrastructure contributed to raising the economic level of the country as well as the face of Iraq not to rely primarily on oil resources only and therefore this study also concluded that it must rely on several criteria that will affect the development and development of this country.

Keywords: business administration, service, transportation, development.

*JEL:* M1, L80, L91, O20

#### 1. Introduction

Raising the level of infrastructure is a vital factor for the socioeconomic transformation in Iraq. Infrastructure, the results must be parallel to improve the service situation and thus the livelihood of the population and continue to focus on these objectives, which is the output of the infrastructure, maintenance and development of the development process. It is in the country, and many governments are looking forward to this development, whether economic, social or political, especially developing countries, including Iraq, which began to think about the establishment of infrastructure since the beginning of the twenties of the last century during the monarchy. It developed after the founding of the reconstruction council in 1959, and achieved a qualitative leap after 1972 after the nationalization of oil, where it established many infrastructure projects such as roads, bridges, housing projects, etc. In 2003, there were signs of interest in building a modern infrastructure. The draft of the Infrastructure Law was issued in 2012, which did not see the light of this moment, which increased the infrastructure, whether it was the last war, which was in 2014-2017. Projects on the ground as a service reality The infrastructure can not be sustained more and does not meet the population and other investment projects without reliance on a sustainable infrastructure and developed to serve the new Iraq, and therefore the main objective of this paper is to demonstrate the management of these projects necessary to promote the reality of Iraq to the neighbors reached.

## 2. Literature review

Project management is a management that exists and is inherent to any project, whether that project is small, medium or large, so any management of any project is a set of skills needed by the manager to help him to manage the project effectively and reach the objectives for which this project was found. Any project classified as a method adopted by individuals, institutions or countries to make a change in order to provide us with something that we do not have at the moment, whether it is a service or a commodity, and there are many concepts that clarify the concept of project management, including "a dynamic process that takes advantage of the appropriate resources of the institution in an orderly manner. Each successful project has a successful manager who is able to manage that project and proceed to achieve its objectives on the ground where it is working" [1] Manage the technology, people, and change in order to achieve goals, reach targets, and deliver the project on time and within budget " [2]

The role and importance of infrastructure should be noted as a concept and importance for each country as it has become a criterion to measure the development of that country or a standard of the economy adopted by the country where many researchers referred to it as "Tinbergen (1962) introduces the distinction between infrastructure (for example, roads and education) and superstructure (manufacturing, agricultural and mining activities) " [3]

# 3. Methodology

## 3.1. Infrastructure importance

The methodology used in this paper is to rely on previous studies in the same field for the difficulty of accessing organizations to conduct questionnaire or interviews. Many studies point to the importance of Iraq's infrastructure for many things:

- The role of infrastructure in economic stability
- Creating opportunities for jobs and prosperity
- Help improve the work of hospitals, schools, businesses and industry.

The roles of the public and private sectors in infrastructure development have made significant progress over time. While the provision and financing of infrastructure services by the private sector dates back to the nineteenth century, a trend towards the private sector Private infrastructure companies have often been nationalized or forced to obtain concession from the government and even enshrined in the constitution.

However, the reverse trend towards private sector participation and competition in the infrastructure sectors began in the early 1980s. Technological development and the expansion of domestic and international capital markets in conjunction with the level of indebtedness and budget constraint limiting the capacity of the public sector. To meet infrastructure needs.

Infrastructure can be achieved through three methods, namely the public sector or the private sector, or partnership between them, and each of these methods have advantages and disadvantages that cannot be addressed, and the best of these methods, the last, the partnership between the two sectors in the completion of infrastructure according to several arrangements can be chosen What is suitable for each infrastructure

## 3.2. Road infrastructure analyses

"Total roads network in Iraq, including primary or secondary paved and un paved roads, and all other paved roads in the country was reported at 58 592 Km in 2018, according to the Iraq Ministry of Planning, and there are New road network is under construction in Kurdistan region with an investment project from 2013 to 2020, and will cost \$5.2 billion. New tunnel has been opened for public use between Zakho (Ibrahim Khalil) and Duhok Governorate which decreased the time by approx. 30 mins, in 2018, there were some 4,535,280 vehicles on the road, and in 2013, Ministry of Planning reported 9,725 traffic accidents causing 2,601 death casualties." [4]

Calculation methods acording to : (Central Statistical Organization) [5]

1 - Number of kilometers traveled:

"The number of passengers transported by trains".

Number of passengers transported x number of kilometers traveled by trains and unit of measurement (passenger. Km).

2 - Number of kilometers covered:

"Means the amount of goods transported for the distances covered by trains.

Quantity of goods transported × number of kilometers traveled by trains and unit of measurement (tons. Km)".

Average Distance and drive time matrix between KR-I major cities and Baghdad					
From	То	ĸм	Drive Time at		
			30km/h	50km/h	90km/h
Baghdad	Dohuk	465	15h30	9h20	5h10
	Erbil	350	11h40	7h00	3h50
	Sulaimaniya	331	11h00	6h40	3h40
	Mosul	369	12h20	7h20	4h10
	Kirkuk	255	8h30	5h10	2h50
	Syria Border	430	16h00	9h40	5h20
Erbil	Mosul	84	2h50	1h40	1h00
	Dohuk Through Bardarash	160	5h20	3h10	1h50
	Dohuk through Akre	224	7h30	4h20	2h30
	Kirkuk	93	3h10	1h50	1h00
	Sulaimaniya	202	6h40	4h00	2h10
	Said Sadiq	35	1h10	0h40	0h20

**Figure 1.** Road Distance information **Source:** Total Iraq road network – Logistics Capacity Assessment, 2019

## 3.3. Project management success

"Definitions of successful projects can be surprisingly elusive. How do we know when a project is successful? When it is profitable? If it comes in on budget? On time? When the technology we are Developing works? When we achieve our long-term payback goals? It is ironic that project managers continue to have great difficulty in identifying a mutually acceptable and encompassing definition Of success. Perhaps our difficulties in defining success are similar to Justice Potter Stewart's ("I know it when I see it") "[6]

The success of the project depends mainly on a set of elements as shown in the following figure (2)



Figure 2. present the elements which any project need them to reach the success. Source: Basic concepts of Project Management,2017.

**Time**: Any project is limited by a certain period of time until it has achieved the objectives assigned to it, and the time in this period has become one of the most basic resources of companies when applied to any project, especially when the implementation of the project

**Cost**: The second component of the project is the cost and is the basic food supplied by that project, which in turn indicates that the budget of any project is determined by the quality and time of completion of that project with the objectives set for it

**Client**: The client is classified at this point from the point of view of the state and from the point of view of the company, where the company considers that the country that offered it the opportunity to invest within its borders as a client and the companies in this moment to satisfy that customer by showing all what you can provide to him regardless of whether A service or commodity in line with the objectives of the company mainly in terms of profitability and reputation that the company is engaged in and other things that serve the interest of the company.

From the point of view of the state, companies that want to invest within their borders are considered a client (due to the circumstances of Iraq in the current period) and provide all laws, procedures and investment offers in order to win that client and thus will benefit the state of mutual benefit between them, especially in Iraq, where it works to give Good reputation for Iraq as it opens up investment opportunities for foreign companies and thus openness to the world.

**Performance:** Is the fourth element of the success of the project where the performance of the stages before, during and after the stage of completion of the implementation of the project.

Performance before the start of the project is the process of research and study and gathering the necessary information about the project to be implemented. Work from halal feedback and provide conditions in the provision of services required by the implementation of the project, whether a service or development to keep up with the world

#### 4.Conclusions

In view of the contents of this paper to clarify the concepts of both projects and infrastructure and the elements required by the project to achieve the objectives for which it was established, as well as clarification and presentation of some statistics for the road network for Iraq was reached the following:

- The Iraqi environment in terms of economic and social side need to initiate such projects at the level of Iraq as a whole.
- The infrastructure of Iraq is old and dilapidated by wars
- Iraq to undertake such projects, whether by bringing foreign investors or contribute with the private sector will open prospects for Iraq and allows him to deal with the rest of the countries
- Managing, implementing and developing such projects helps to support Iraq's economic stability and create jobs for many people.

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