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The Role of the Road Transport Sector in Improving Economic and Social Mobility: A Case Study of Constantine Province

LOUCIF Amar [1] *, OMANE Ahmed [2]

[1] Laboratory of Economics and Business Administration, University of Constantine 2 (Algeria) , amar.loucif@univ-constantine2.dz

[2] Laboratory of Economics and Business Administration, University of Constantine 2 (Algeria), ahmed.omane@univ-constantine2.dz

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Abstract:

Road transport is a strategic pillar of economic stability and a key indicator of infrastructure development and urbanization, as it facilitates the movement of goods and people and enhances market integration .This research aims to analyze the role of road transport in improving economic and social mobility in Constantine Province by examining, its impact on enhancing access to centers of economic activity and services, reducing spatial disparities and supporting the dynamics of urban expansion. The descriptive-analytical method was adopted to assess the sector's current situation and its general trends.

The study concludes that the organizational and spatial development witnessed in road transport has contributed to strengthening urban integration and improving the smoothness of movement, which has been positively reflected in economic and social mobility. However these efforts remain insufficient to keep pace with rapid urbanization and structural pressures. Accordingly, the research recommends adopting a comprehensive strategy based on expanding infrastructure, modernizing vehicle fleets and integrating intelligent transport systems, in order to raise network efficiency and achieve sustainable urban development.

Keywords: Road Transport; Intelligent Transport; Constantine Province.

JEL Classification: R41; R11; R42.

* ***Corresponding author.***

Introduction

The transport sector represents one of the structural components of economic and spatial systems. Its role goes beyond being merely a means for moving people and goods; it has become a strategic instrument for reshaping urban spaces and strengthening the mechanisms of growth and social integration. Historically, its development has been associated with structural transformations in the economy, especially since the Industrial Revolution, during which it contributed to expanding markets reducing transaction costs, and enhancing connectivity between regions. This has made it an indicator for measuring the efficiency of infrastructure and the level of urbanization.

Road transport occupies a central position within the transport system, as it is the mode most closely linked to residents' daily lives and to local economic activities. It relies on a road network that determines patterns of urban expansion, investment trends, and the distribution of urban functions. From this perspective, improving economic and social mobility depends on the efficiency of this sector in enhancing accessibility, reducing spatial disparities, and achieving equity in the distribution of services and opportunities.

In recent years, Constantine Province has experienced rapid urban transformations and a noticeable spatial expansion, accompanied by the implementation of a set of organizational reforms and network expansions in the road transport sector. In light of the recognized importance of road transport, we propose the following research problem:

To what extent does the road transport sector in Constantine Province contribute to improving economic and social mobility?

Research Hypothesis

The research hypothesis was formulated in light of the proposed problem as follows:

The road transport sector in Constantine Province contributes to improving economic and social mobility.

Research Importance

Road transport is a structural component of the development system due to its central role in strengthening spatial connectivity, facilitating the movement of people and goods, and reducing transaction costs. This is directly reflected in the dynamism of economic activity and in improved access to services and employment opportunities. The level of its efficiency is viewed as an indicator of the degree of economic development the quality of infrastructure, and the level of urbanization.

Research Objectives

This research seeks to achieve the following objectives:

- Describe the situation of road transport in Constantine Province and its general trends;
- Identify the challenges and future prospects of the road transport sector in Constantine Province.

Research Methodology

The descriptive method and the descriptive-analytical method were adopted to diagnose the reality of the road transport sector in Constantine Province, analyze its general trends, and determine its most prominent challenges and prospects for future development.

Research Structure

In order to address the research problem, the study was divided into three sections:

- The conceptual framework of transport
- A description of the current situation of the road transport sector in Constantine Province
- Challenges and future prospects of the road transport sector in Constantine Province

Previous Studies

There are many studies that examine the topic of road transport in Constantine Province. Below are examples of studies related to this research topic, with the aim of identifying the most important findings reached in this field.

- Bougabrine Mofida, Ben Chenna Abdelali, and Ghrraz El Taher The Reality of the Quality of Urban Bus Transport Service: The Urban Line Bab El Kantara–Ali Mendjeli as a Model, Journal of Society, Education and Work, Mouloud Mammeri University, Tizi Ouzou, Algeria, Volume 07 Issue 01, 2022.

This study aimed to evaluate the quality of urban bus transport service on the Bab El Kantara–Ali Mendjeli line by measuring user satisfaction and diagnosing shortcomings in light of quality, efficiency and sustainability standards in urban transport. The study showed that the Bab El Kantara–New City Ali Mendjeli line suffers from a shortage of buses, an aging fleet, and long travel times, which leads to poor service quality and its divergence from sustainability standards and residents' expectations.

- Siari Nawara and Ben Turki Ezzedine, Evaluating and Improving the Quality of Urban Bus Transport Service in Constantine, Journal of New

Economics, Khemis Miliana University, Khemis Miliana, Algeria, Volume 17, Issue 1, 2022.

The study addressed the evaluation of the quality of urban bus transport service in the city of Constantine and identified the causes that lead to declining quality levels and limited user satisfaction, using continuous improvement tools and the five dimensions of quality assessment. The study concluded that urban bus transport service in Constantine is of low quality, with limited user satisfaction and that public buses provide a relatively better service than private ones. It also found that integration between the public and private sectors together with the application of continuous improvement tools is the most effective solution for addressing problems and improving user satisfaction.

- Salama Wafaa, "The Role of the Transport Sector in Achieving Economic Development in Algeria," Al-Bashaer Economic Journal University of Béchar, Béchar, Algeria, Vol. 5, No. 1, 2019.

This study examined the role of the transport sector in Algeria's economic development and its impact on economic growth. The findings indicate that the sector contributes significantly to wealth creation and employment, underscoring the need for further investment and modernization to enhance its role in supporting economic development.

- Boukhtala, Samir, Zergoun, Mohamed, and Ben Amara Nawal "The Reality and Prospects of Developing the Transport Sector in Algeria and Its Role in Economic Development", Algerian Journal of Economic Development, Kasdi Merbah University, Ouargla, Algeria, No. 6, June 2017.

This study analyzed the contribution of the transport sector to economic development in Algeria. The findings identified transport as a key driver of economic growth and emphasized the need for economic diversification to achieve sustainable development.

1. The Conceptual Framework of Transport

This section covers the emergence and development of transport its concept, its types, and its importance.

1.1. The Emergence and Development of Transport

The topic of transport has received long-standing attention with roots extending to advanced stages in the history of human thought. The transport sector has undergone continuous developments throughout the ages and continues to experience dynamic transformations to this day. This indicates that transport is not a fleeting phenomenon or a recent creation; rather, it is the result of ongoing accumulation over decades.

1.1.1. Earlier Patterns in the Emergence of Transport

Transport draws nourishment from history. Since ancient times humans initially relied on their own muscular effort for movement, and later depended on animals. To properly understand historical development, it is useful to study the earlier patterns that led to the emergence of transport (Melouk, 2023, p. 22). Thinkers have classified the earlier patterns of transport's emergence into three patterns (Melouk, 2023, pp. 22-23):

- **First pattern: The primitive pattern.** From the outset, humans depended on their own muscular effort for movement, which was the first and simplest means of travel, characterized by slowness and limited carrying capacity. Humans then began to rely on animals for movement after domesticating them, such as donkeys, horses, mules, gazelles and dogs. After the discovery of the wheel, its use was developed in carts pulled by animals. The ancient Iraqis were pioneers in discovering developing, and using the wheel.
- **Second pattern: The commercial pattern.** In this pattern, transport became linked to diverse commercial practices, including those based on agricultural and industrial sources, as well as those related to natural materials such as wood, fuel sources, salt, and many others.
- **Third pattern: The industrial pattern.** The discovery and use of steam power marked a new turning point in humanity's development of transport throughout history. Steam was used as a driving force for the movement of various means of transport, foremost among them railway engines (trains), ships, and boats. Steam power relied primarily on energy generated by burning coal to heat water.

By analyzing these three patterns, human societies can be divided into primitive societies that rely on humans and animals, commercial societies linked to trade practices, and industrial societies that depend on inventions. These patterns formed the foundational basis from which land, sea, and air transport later developed.

1.1.2. The Historical Emergence of Transport

The historical emergence of transport is presented according to a chronological sequence from the oldest to the most recent, allowing the development of transport modes to be traced across different historical stages. It is also divided into two types: the development of transport in the Western world and its development in the Arab world.

A. Transport in the Western World

Ancient civilizations developed advanced transport systems to support trade and regional connectivity. The Phoenicians established

extensive maritime routes across the Mediterranean and beyond while China built an organized land road network of about 3,200 km carefully classified according to its functional use. In Europe, major trade routes such as the Amber Road facilitated long-distance exchange between northern Eurasia and the Mediterranean.

Although ancient Greece and India also developed paved roads the most advanced network was that of the Roman Empire, which exceeded 8,500 km and included more than 370 roads. These routes were precisely organized with distance markers and direct connections between cities supported by bridges and an efficient postal system that enabled rapid movement across the empire. Roman roads were functionally classified into military, local, and rural routes, among which the Appian Way was the most prominent for both military and commercial purposes (Melouk, 2023, pp. 21-22).

Based on the development of transport infrastructure in the Western world, the pivotal role played by organized road networks becomes clear in supporting political and economic expansion and facilitating movement and communication, especially within the Roman Empire.

B. Transport in the Arab World

Natural conditions in central and southern Iraq played a decisive role in shaping ancient Mesopotamian civilization. The abundance of fertile floodplains and water resources encouraged settlements along the Tigris and Euphrates rivers, which provided food resources and facilitated communication through navigable waterways, thereby supporting trade within the region. River transport was particularly significant due to its ability to carry heavy loads, while the Euphrates served as a natural corridor linking Mesopotamia with neighboring regions. In addition, Mesopotamians contributed to the development of land transport through the invention of the wheel around 3500 BC in Uruk, leading to the use of wheeled carts for transporting goods, people, and for military purposes. Later, during the Islamic periods, Arab sailors further advanced maritime navigation and discovered important sea routes, notably the Cape of Good Hope route which significantly influenced global trade (Melouk, 2023, pp. 18-20).

Through this historical narration of the chronology of transport in the Arab world, it can be said that maritime transport received greater attention in the Arab world.

1.2 The Concept of Transport

Transport is considered one of the fundamental branches of economic, social, and service activity. When addressing its concept, it is useful to refer to it through two main dimensions:

Linguistic meaning: Transport, in linguistic usage, is the verbal noun of "to transport," meaning to transfer something from one place to another (Almaany Website, 2026).

Terminological meaning: The economic meaning of transport can be explained from a logistics perspective and from the perspective of transport geography. In addition, the view of the Algerian legislator and the opinions of some thinkers may be cited, including the following:

From the logistics perspective, transport is defined as: "the process that involves moving materials and supplies from suppliers to the project site, followed by handling these materials within the project, and then transporting them later to customers" (Kafi, 2021, p. 111).

Transport is defined from the perspective of transport geography as: "the movement of individuals, goods, inventions, ideas, information, and capital from one place to another" (University of Babylon, 2025).

Article (2) of Law No. 11-09, dated 3 June 2011, concerning the guidance and regulation of land transport, defines it as: "any activity through which an operator transports persons or goods from one place to another by road, railway, or cable, using a suitable vehicle" (11-09, 2011, p. 10).

William Petty (W. Petty) also defines transport as: "the level of progress in the fields of the economy and infrastructure, and an essential indicator of the degree of urbanization in society; it accurately reflects the technological stage that has been reached" (Riyad, 2021, p. 7).

Hans Heymann defines it as: "the process of moving goods and individuals, each toward its objective, some of which objectives are economic and others non-economic" (Kafi M. Y., 2015, p. 16).

Hans A. Adler defines it as: "a service aimed at connecting production centers and inhabited areas with each other, or with centers of consumption" (Adler, 1987, p. 3).

After clarifying these concepts, transport can be defined as: "an integrated functional service system concerned with moving individuals and goods efficiently and safely between different locations. It is a basic element of infrastructure that reflects the degree of urbanization and technological progress, and it contributes to achieving economic and social integration between production centers and consumption areas." In light of this definition, the following characteristics of transport can be derived:

- **A functional and service system:** Transport facilities—such as highways, parking areas, and public transport—are key components within

an integrated functional and service system designed to facilitate the movement of goods and people effectively, ensuring responsiveness to diverse societal and economic needs (Bruton, 2021, p. 57).

– **A reflection of urbanization and technological progress**: This refers to an established system in terms of organization, operational efficiency, social equity, and alignment with objectives (Vannieuwenhuyse & Breedam, 2023).

1.3 Types of Transport

Types of transport are classified according to the means of transport used into the following categories:

- **Land Transport:** Land transport is an activity concerned with moving people and goods from one place to another over land, using various means such as cars, buses, trucks, and railways. This type of transport relies on dedicated infrastructure that includes a road network of different types (Teodorovic & Janić, 2022, pp. 54-55).
- **Maritime Transport:** Maritime transport is defined as the process of transporting passengers or goods across bodies of water from one port to another. This process may take place within a circular trip that begins and ends at the same port (Refaat, 2023, p. 748).
- **Air Transport:** Air transport refers to the operation of airlines to transport passengers and goods from the departure airport to the arrival airport by aircraft (Ben Abdelaziz & Ben Zaid, 2021, p. 2609).

By reviewing the three types of transport, it becomes clear that each type has specific characteristics that make it most suitable for use in particular contexts.

1.4. The Importance of Transport

Transport is one of the fundamental pillars for shaping a clear vision of the features of the future, whether at the economic level or the social level. The importance of transport emerges from the following points:

1.4.1 Transport as a Fundamental Element in Organizing and Directing Economic Activity

Developing transport infrastructure plays a pivotal role in supporting related industries, such as vehicle manufacturing and diverse transport companies, thereby enhancing the efficiency of goods movement and individual mobility. Transport also influences real estate values and the spatial distribution of economic activities, underscoring its significance in shaping regional economic structures. Consequently, the role of transport extends beyond mere physical movement; it functions as a strategic tool for planning and directing economic activity while promoting spatial

and economic balance and integration across regions (Rodrigue , Comtois , & Slack , 2006, p. 4).

1.4.2 The Role of Transport in the Tourism Industry

Transport is an essential component of the structure of the tourism sector, as it connects tourists' points of departure with target destinations and their facilities, such as accommodation and tourist attractions. The development of tourism is linked to the availability of affordable and efficient means of transport. Transport infrastructure is viewed as a vital link that connects areas of tourist demand with centers of attraction and contributes to expanding participation in tourism activity (Dinu , 2018 , p. 186).

1.4.3 The Role of Transport in Supporting the Development of Urban Expansion

Transport infrastructure is crucial in shaping new urban expansion by stimulating industrial agglomerations, which serve as key drivers of urban growth. However, this positive impact is influenced by the population-threshold effect: infrastructure promotes urbanization most effectively at lower population densities, while densities beyond a certain threshold can generate negative consequences, such as congestion and environmental pressures, which may hinder further urban development (Shen , Xiaohong, Honglin , & Zhitao , 2024, p. 1).

2. Description of the Current Situation of the Road Transport Sector in Constantine Province

This section examines the current status of the transport sector in Constantine Province, focusing on public road passenger transport, taxis road freight, rail transport, the tramway, and the aerial cable car system.

2.1. The Situation of Public Passenger Road Transport

This part addresses the main types of transport, including urban peri-urban, rural, interprovincial, school, university, workers', and tourist transport.

2.1.1. The Situation of Urban Transport

The table summarizes the 2024 status of urban transport in Constantine Province, detailing routes, active carriers, bus fleet size carrying capacity, and activities related to licensing, renewal and cancellations.

Table (1): The Situation of Urban Transport in Constantine Province, 2024

Indicator	Value
Lines	73
Carriers	805

Buses	1,062
Capacity	55,055
New Licenses	25
Bus Replacements	119
Cancellations	98

Source: (Directorate of Transport of Constantine Province, 2024, p. 3)

We note from the table:

- The number of operating routes reached 73, with active carriers increasing to 805. This indicates a dynamic urban transport system and a diverse range of services that effectively meet the daily mobility needs of residents.
- The bus fleet, comprising approximately 1,062 buses with a total carrying capacity of over 55,055 seats, demonstrates the urban transport system's capacity to accommodate the growing daily mobility demand reflecting the adequacy of supply relative to residents' travel needs.
- In 2024, 119 bus replacement operations were carried out, reflecting ongoing efforts to renew the urban transport fleet and enhance service quality. These upgrades improve safety, comfort, and the attractiveness of public transport as an efficient and cost-effective mobility option. Conversely, 98 cases of activity cancellation demonstrate the role of regulatory oversight in optimizing route operations, enhancing efficiency, and ensuring the continuity of economically and socially valuable services.

2.1.2. Peri-Urban Transport

The table provides an overview of peri-urban transport in Constantine Province for 2024, detailing routes, active carriers, bus fleet size, carrying capacity, and activities related to licensing, renewal and cancellations.

Table (2): The Situation of Peri-Urban Transport in Constantine Province 2024

Indicator	**Value**
Lines	24
Carriers	146
Buses	171
Capacity	7,105
New Licenses	14
Bus Replacements	13
Cancellations	19

Source: (Directorate of Transport of Constantine Province, 2024, p. 3)

The table data indicate the following:

– The number of peri-urban transport routes in Constantine Province during 2024 reached 24 routes, operated by 146 operators, with an active fleet estimated at 171 buses providing a carrying capacity of approximately 7,105 seats. This highlights the contribution of this mode of transport to supporting economic and social mobility by strengthening functional connectivity between municipalities with a peri-urban character and the province's urban area.

– The authorization of 14 new licenses indicates a gradual expansion of the peri-urban transport network and its responsiveness to growing demand requirements. Meanwhile, the recorded cancellations, totaling 19 cases, represent a regulatory measure that falls within the framework of rationalizing route operation and improving their economic and social returns.

2.1.3. Rural Transport

The table summarizes the 2024 status of rural transport in Constantine Province, covering routes, active carriers, bus fleet, capacity and licensing and activity updates.

Table (3): The Situation of Rural Transport in Constantine Province, 2024

Indicator	Value
Lines	49
Carriers	151
Buses	152
Capacity	4,544
New Licenses	10
Bus Replacements	3
Cancellations	17

Source: (Directorate of Transport of Constantine Province, 2024, p. 05)

We note from the table:

– Rural transport in Constantine Province in 2024 includes 49 routes operated by 151 carriers, with a fleet estimated at 152 buses and a carrying capacity of approximately 4,544 seats. This highlights its role in improving economic and social mobility by linking rural areas with urban and peri-urban centers.

– The granting of 10 new licenses reflects a tendency to strengthen the network, while the recorded cancellations (17 cases) fall within regulatory mechanisms aimed at rationalizing the use of routes and ensuring their economic and social effectiveness.

2.1.4. Interprovincial Transport

The table summarizes the 2024 status of interprovincial transport in Constantine Province, including routes, active carriers, bus fleet, capacity and licensing and activity changes.

Table (4): The Situation of Interprovincial Transport in Constantine Province, 2024

Indicator	Value
Lines	61
Carriers	168
Buses	317
Capacity	13,087
New Licenses	9
Bus Replacements	19
Cancellations	36

Source: (Directorate of Transport of Constantine Province, 2024, p. 05)

We note from the table:

- Interprovincial transport in Constantine Province in 2024 includes 61 routes operated by 168 carriers, with a fleet estimated at 317 buses and a carrying capacity of approximately 13,087 seats. This reflects its role in enhancing economic and social mobility at both the regional and national levels by facilitating the movement of people and connecting the province with the various provinces of the country.
- The granting of 9 new licenses indicates limited expansion of the network, while bus replacement operations (19 operations) reflect a tendency to improve service quality. In contrast, the recording of 36 cases of activity cancellation falls within regulatory mechanisms aimed at rationalizing route operation and ensuring their economic and social effectiveness.

2.1.5. School Transport

The table summarizes the 2024 status of school transport in Constantine Province, including routes, active carriers, and bus fleet.

Table (5): The Situation of School Transport in Constantine Province, 2024

Indicator	Value
Carriers	86
Buses	216
Lines	168

Source: (Directorate of Transport of Constantine Province, 2024, p. 06)

The table data show that school transport in Constantine Province in 2024 relies on 86 carriers operating 216 buses across 168 routes emphasizing its social role in ensuring safe and regular student travel

reducing family costs, and supporting the effectiveness of the education system.

2.1.6. University Transport

The table summarizes the 2024 status of university transport in Constantine Province, including routes, active carriers, and bus fleet.

Table (6): The Situation of University Transport in Constantine Province 2024

Indicator	Value
Carriers	11
Buses	351
Lines	139

Source: (Directorate of Transport of Constantine Province, 2024, p. 06)

The table data show that university transport in Constantine Province in 2024 is provided by 11 carriers operating 351 buses across 139 routes, highlighting its strategic role in facilitating student mobility reducing financial burdens, and supporting academic continuity.

2.1.7. Workers' Transport

The table summarizes the 2024 status of workers' transport in Constantine Province, including routes, active carriers, bus fleet and capacity.

Table (7): The Situation of Workers' Transport in Constantine Province, 2024

Sector	Lines	Carriers	Buses	Capacity
Public	According to the needs of the beneficiary entities	94	252	8,734
Private		116	570	18,739
Total		210	822	27,473

Source: (Directorate of Transport of Constantine Province, 2024, p. 06)

The table data indicate that workers' transport in Constantine Province in 2024 covered 210 routes, with the participation of 822 buses managed by 210 carriers, from both public and private sectors. This system plays a crucial role in enhancing economic and social mobility by facilitating worker commutes, reducing individual travel costs supporting productive activity, and contributing to workforce stability.

2.1.8. Tourist Transport

The table summarizes the 2024 status of tourist transport in Constantine Province, including trip types and number of licenses granted.

Table (8): The Situation of Tourist Transport in Constantine Province, 2024

Trip Type	Number of Licenses Granted
Exceptional trips	1,499
International trips (to the Republic of Tunisia)	8
Blue Plan	449
Total	1,656

Source: (Directorate of Transport of Constantine Province, 2024, p. 06)

Tourist transport data in Constantine Province in 2024 indicate that a total of 1,656 licenses were granted to operate various trips, including 1,499 exceptional trips, 8 international trips to the Republic of Tunisia and 449 trips under the Blue Plan. This highlights its economic and social role in supporting tourism, facilitating domestic and international travel boosting sector-related revenue and employment, and enhancing the city's attractiveness as a tourist destination.

2.2. The Situation of Transport by Taxi

The table summarizes the 2024 status of taxi transport in Constantine Province, including licenses, types of taxis, taxi companies, and their vehicle fleets.

Table (9): The Situation of Transport by Taxi in Constantine Province, 2024

Indicator	Value
Licenses granted	4,542
Unused licenses	820
Used licenses	3,722
Individual taxis	2,212
Urban shared taxis	576
Inter-municipal shared taxis	509
Interprovincial shared taxis	425
Taxi companies	47
Vehicles owned by taxi companies	612

Source: (Directorate of Transport of Constantine Province, 2024, p. 08)

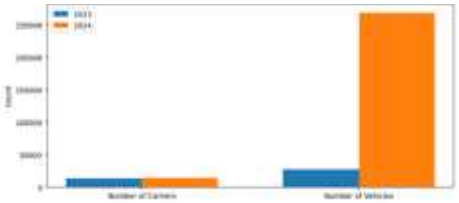
Taxi transport data indicate that 4,542 licenses were granted including 3,722 licenses in use and 820 not in use. This reflects the dynamism of the sector, while also indicating room to expand services in the future. The table details show a diverse distribution that includes 2,212 individual taxis, 576 urban shared taxis, 509 inter-municipal shared

taxis, and 425 interprovincial shared taxis. In addition, there are 47 taxi companies owning 612 vehicles. This diverse distribution enhances economic and social mobility by meeting individual and collective travel needs, connecting municipalities and provinces, creating employment and providing flexible, comfortable access to urban and peri-urban services.

2.3. Road Freight Transport by Roads

The figure illustrates the situation of road freight transport in Constantine Province during 2023–2024, showing the number of carriers and vehicles involved.

Figure (1): The Situation of Road Freight Transport in Constantine Province, 2023–2024



Source: (Directorate of Transport of Constantine Province, 2024, p. 09)

The figure's data indicate an increase in the number of carriers from 13,679 carriers in 2023 to 13,771 carriers in 2024, reflecting the dynamism of this sector and its growing importance in supporting economic activity. The data also show a notable development in fleet size: the number of vehicles in 2024 reached about 268,272 vehicles, compared to 27,106 vehicles in 2023, enhancing transport capacity. This growth strengthens economic mobility by facilitating goods movement within and beyond the province, supporting productive and commercial activities and promoting integration among economic actors.

2.4. Transport of Passengers and Goods by Rail

The figure shows rail passenger and freight transport in Constantine Province in 2024, including passenger numbers and transported load (tons) in different directions.

Figure (2): The Situation of Passenger and Freight Rail Transport in Constantine Province, 2024



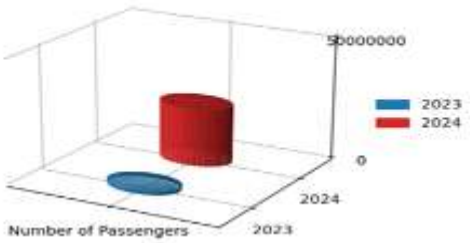
Source: (Directorate of Transport of Constantine Province, 2024, p. 12)

The figure's data show that rail transport activity in Constantine Province in 2024 included the transport of 74,132 passengers across different directions, in addition to transporting an estimated load of 784,725 tons of goods. These indicators reflect the dual role of this mode of transport in improving economic and social mobility by ensuring the movement of individuals at a lower cost and with a higher degree of safety and by supporting the movement of goods and raw materials between the province and other regions.

2.5. Transport by Tramway

The following figure shows the situation of tramway transport in Constantine Province during the period (2023–2024).

Figure (3): The Situation of Tramway Transport in Constantine Province, 2023–2024



Source: (Directorate of Transport of Constantine Province, 2024, p. 13)

The figure's data show a noticeable development in tramway transport activity in Constantine Province during the period (2023–2024). The number of passengers increased from 17,694,542.5 passengers in 2023 to 23,710,687 passengers in 2024. This rise reflects the growing demand for this mode of transport due to its speed, regularity, and high carrying capacity. The tramway contributes effectively to improving economic and social mobility by facilitating the movement of citizens and students to university hubs and activity zones, reducing travel time and costs and easing pressure on the traditional road transport network. This makes it one of the fundamental pillars of sustainable urban transport in Constantine Province.

2.6. Transport by the Aerial Cable Car Unit (Teleferic)

The following table shows the situation of transport by the aerial cable car unit (teleferic) in Constantine Province during 2024.

Table (10): The Situation of Transport by the Aerial Cable Car Unit (Teleferic) in Constantine Province, 2024

Indicator	Value
Line length (km)	1.516
Number of stations	3

Travel time (minutes)	8
Number of cabins	48
Capacity (passengers/day)	15,000

Source: (Directorate of Transport of Constantine Province, 2024, p. 13)

The table's data show that the aerial cable car unit (teleferic) in Constantine Province in 2024 extends over a length of 1.516 km and includes three (03) stations, with a travel time estimated at 8 minutes. It operates with 48 cabins, with a carrying capacity reaching 15,000 passengers per day. These indicators reflect the complementary role of this mode of transport in improving urban mobility, especially in areas with rugged terrain. The teleferic contributes to enhancing economic and social mobility by reducing travel time to vital facilities—particularly health institutions and elevated neighborhoods—while also easing pressure on the road network and improving the quality of urban movement within a sustainable and environmentally friendly transport framework.

3. Challenges and Future Prospects of the Road Transport Sector in Constantine Province

3.1. Challenges Facing the Road Transport Sector in Constantine Province

The road transport sector in Constantine Province faces a number of challenges, the most important of which are the following:

3.1.1. Urban Planning and Urban Expansion

Urban planning and expansion strongly affect the efficiency of road transport in Constantine Province, as rapid growth, peripheral development population increase, and complex topography strain networks and complicate connectivity. The Inter-Municipal Master Plan provides a strategic framework to reorganize urban space and improve transport efficiency by integrating roads, mass transit, and railways, promoting sustainable mobility and better access to employment and services (Chebila, 2025).

3.1.2. Fleet Renewal

The provision of 104 new buses to Constantine Province and the development of urban taxi services reflect a strategic effort to modernize public transport and enhance operational efficiency. These measures increase network capacity, reduce service disruptions, improve trip reliability, and expand mobility options, particularly in underserved areas thereby reducing travel time and costs, facilitating access to employment and services, and promoting sustainable economic and social mobility (Fassi, 2025).

3.1.3. Regulation and Governance of Road Transport

The Directorate of Transport of Constantine Province has implemented regulatory measures to enhance transport sector performance through integrated planning and governance. Emphasis has been placed on revitalizing rail transport and developing cable transport to address the city's topographic challenges, thereby reducing congestion and environmental impacts. Simultaneously, flexible regulations have strengthened public road transport in urban and peri-urban areas, ensuring alignment between transport supply, rising demand, and urban expansion. This integrated approach underscores the role of effective governance in improving network efficiency and promoting sustainable local development (Directorate of Transport of Constantine Province, 2024, p. 19).

3.1.4. Integration Between Transport Modes

Constantine Province has developed an integrated, multi-modal transport system that coordinates road, rail, and modern urban transport modes to enhance network connectivity. Initiatives such as tramway extensions, the reactivation of the aerial cable car, and the approval of new cable transport lines improve access between elevated neighborhoods and urban centers, increase road network efficiency, optimize traffic distribution, and promote economic and social mobility in alignment with urban planning and sustainable development objectives (Trifi, 2026).

3.2. Future Prospects of the Road Transport Sector in Constantine Province

The future prospects of the road transport sector in Constantine Province revolve around the following:

3.2.1. Developing and Modernizing Road Transport Infrastructure

Rehabilitating and expanding Constantine's teleferic and tramway systems enhances neighborhood connectivity, improves public transport quality, and supports tourism, while ensuring continuity of structured transport and daily mobility. Expanding the tramway network and modernizing the urban bus fleet facilitate access to new districts promote economic activity, and improve access to essential services. Strengthening rail transport further enhances regional and national connectivity, supporting the movement of people and goods and reinforcing Constantine's role as an economic and logistical hub, thereby contributing to sustainable economic and social development (Sarih, 2025).

3.2.2. Improving the Public Transport System

Improving the public transport system through renewing road and rail fleets, repairing out-of-service trains, expanding teleferic lines and renewing the bus and taxi fleet aims to improve service quality, raise

transport efficiency, and facilitate the movement of passengers and goods. This strengthens economic and social mobility and reduces regional disparities in access to services and economic centers (Ennasr, 2025).

3.2.3. Applying Intelligent Transport Technologies to Enhance Sustainability

Modernizing the road transport system through the integration of intelligent transport technologies, including traffic management and digital monitoring, enhances operational efficiency, service quality and passenger organization while reducing travel time. These initiatives promote transport sustainability by improving energy efficiency, lowering emissions, and renewing fleets with cleaner vehicles, thereby strengthening economic and social mobility and supporting equitable access to services and economic centers (ESCWA, 2021, p. 54).

Conclusion

Road transport is a strategic sector whose importance has increased with industrialization and technological advancement due to its pivotal role in supporting economic and social development. It contributes to reducing production costs, facilitating the flow of goods and services, stimulating investment and tourism, and fostering urban expansion. Moreover, it enhances economic mobility by improving exchange efficiency and reducing time and transaction costs, while strengthening social mobility through better access to labor markets and essential services and by mitigating spatial disparities.

In Constantine Province, the road transport sector shows regulatory and spatial dynamism through route restructuring, the creation of new corridors, and improved connectivity between municipalities and urban centers. However, rapid urban expansion, complex topography, and pressure on existing networks contribute to congestion and reduce network efficiency. Therefore, expanding infrastructure, modernizing fleets and adopting intelligent transport systems remain essential to improving service quality and enhancing economic and social mobility.

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