

# Assessment And Evaluation Of Optimal Management In Urban Traffic Management

**Ahmad Atrak**

Master of Urban Planning and Urban Design, Department of Art and Architecture, Science and Research Branch, Islamic Azad University, Tehran, Iran

**Abstract**—Traffic and correctly suitable management in transportation have been recognized as an inevitably essential matter especially in megacities. Without knowing causes and effects of that as well as its histories, tackling problems would be controversially impossible and resulted in confronting challenges. The goal of this article is to study traffic experiences of Iran and its way to look at this matter, requirement of traffic management and safety by using methods such as librarian and documentary information in Iran. It is also true of utilizing knowledge can be find on the Internet. Then, the experiences of other industrial countries in increasing the rate of safety and the significance of that will be expressed. Finally, measures for seeking to more conveniently traffic management can be taken will be established.

**Keywords**—*transportation, safety, traffic management, traffic safety*

## i. Introduction

One of the controversially significant matter of megacities, such as Tehran, are involved is traffic that causes not only by wasting time of residences, but also it can bring psycho diseases, air pollution, wasting national investment, which are recently exceed to the highest rate in Tehran. Moreover, this phenomenon has resulted in embezzling time and energy. However, these issues would necessitate numerous inquiries. The primary goal of this article, on one hand, is to probe in the field of traffic safety especially in undeveloped countries and experiences of increasing traffic safety in industrial countries, on the other hand, to observe incidences have taken place in the field of traffic and to find its causes in Iran in the last half of decade. Because unsuitable perception of the causes would prevent successful management.

## ii. Traffic in Iran

In order to study of traffic in Iran, assembling historical information appears to be vitally essential. Following by industrial revolution in Europe, the lifestyle of people were gradually altered and the invention of steam used as force has led lifestyle to a significant change. The first vehicle worked by steam force was invented by a French scientist called

‘Cugnot’, which had three wheels and a steam boiler provided demands of motive force. Our country was also influenced by these modifications, such as machinery vehicles, which are substituted for conventional vehicle (carriage on freight tramway). By considering time more meticulously, the first carriage worked by steam force was imported by the king of Iran "Mozafaredin Shah" in 1904, the number of vehicles imported for the reach to Tehran exceeded 20. Some vehicles was appropriate to transport goods (Lorries) and for passengers occasionally. Then, more fashionable vehicle as buses became increasingly prevalent to transport passengers instead of tramway. In 1926, the permission to establish the first company for managing buses was given by Islamic legislative assembly. The first office was run by Danish and the buses started to work in every fifth region of Tehran. In 1974, the first office of taxi management were constituted by 20 vehicles ‘B.B.Ford’. These occurrence was firstly interesting because of the short time was easily needed to quick transport. At first, just governmental people or the reach could afford to have car and there were driven by people named ‘shuffer’. The attempt to learn to drive were becoming more popular with ordinary people.

Harnessing traffic and the problems caused by that especially were taken place by occurrence of two vital incidences in 60s. Firstly, vast immigration of rural people followed by destruction of feudal agriculture and the process of a rule named improving field division resulted in increasing motivation of great landlords in industrial or commercial investments in cities. Secondly, creating great numbers of private cars in a factory in vicinity of Tehran brings the vast volume of cars to Tehran primarily, then other major cities. Autumn of 2007, "comprehensive transportation plan of Tehran" was provided and passed. This plan, which is considered intentions of greater plans such as "comprehensive plan" and "the forth economic plan of Iran", demonstrated perspectives of Tehran within 20 years. Fundamental factors of transportation in 2007 and 2025 was shown by detailed statistics in comprehensive transportation plan by considered European countries.

## iii. Traffic and its features in Iran

"Traffic" is an international term referred to transportation of vehicles, people and animals. Traffic constitutes of three factors, namely: human being,

routes, Vehicles. If each factor does not unsuitably exist, no traffic will be generated. Moreover, the way of looking at distinct factors that have various features should be different. However, in Iran, they are horizontally determined by the same value. Vehicles and routes are similar mechanical and solid tools that are naturally different from human being and they cannot be observed horizontally. The most major issue is the huge investment in the two factors without considering people. Because it was thought people exist and do not require to adopt. As a result, it is likely to perceive that the most problematic difficulty is the tradition of people. As there are evidence show the same volume of transportation with enormously fewer traffic in other countries. Therefore, it can be said that the expression of traffic contained vehicles, routes and signals without contemplating the most complicated factor, it means human, in Iran.

#### iv. The best solution to better traffic control

Studies have been conducted show there are three measures can be taken in order to decrease disadvantages caused by traffic and best methods of traffic control are categorically mentioned:

- 1) Traffic engineering
- 2) Applying rules
- 3) Instructure

In traffic engineering, routes and intersections are built to make transportation more convenient, Lights and guidance signs are installed. However, instructing international traffic rules to either executives or ordinary people have a vital role in traffic control. Because it is necessary for living in an industrial and mechanized country to be entirely aware of its culture. Generally, instructions should be begun from the first factor meant human in the role of executive, driver or pedestrian. If a pedestrian is not informed about traditions, the regulations related to them and appropriate social behaviors, it is implicitly clear that it will cause many difficulties.

#### v. The goals of traffic management

The common goal of traffic management is to sufficiently beneficial utilization of current transport network and increase the safety level of routes, which should be acted by preventing from damaging natural environment. In other words, traffic management, usage of current opportunities and increasing its sufficiency and public protection related to transportation routes. Measures are relevant to the type of traffic, For instance, the measures in relation to the rise of benefits for pedestrians or bike riders and heavy vehicles are different from each other. There have been always the incompatible deficiency in one aspect and it is impossible to develop a plan brings benefits in all aspects with no disadvantage. Increasing green spaces, which is beneficial for aged or disable people, for example, can probably leave fewer areas for pedestrian routes. It is commonly seen traffic management plans are controversially distinct from demands of people. In addition, the

same subject can be different in other distinct times or locations. Therefore, significantly vital measures are mentioned as followed:

- 1) Quick performance and sufficient plan should be administrated
- 2) Improving the utilization of current installations and opportunities by considering demands of people.
- 3) Administrating measures related to pedestrian routes
- 4) Administrating measures related to make buses preferred
- 5) Set the regulation of bike riding
- 6) Set the regulation of trucks ( their routes and parking spaces)
- 7) Calming traffic plans should be provided
- 8) Improving the situations of intersections (traffic islands, priorities, creating spaces in which turning right is easily possible, creating squares, installing signs)
- 9) Developing coordination between traffic lights
- 10) Making some limitations to cross
- 11) Making streets direction one way
- 12) Painting streets (lining, colorful asphalt)

Traffic in distinct location has its causes, however, the meticulous observation can be generally divided in Iran.

– Firstly the most significant matter is the lack of coordination between governmental executives who are managing individually. This brings erratic traffic. The practical plans of Traffic Control Company, for example, are not allowed by municipality that can result in postponing to reach achievements. So, one major manager for traffic management is undeniably distinguished as essential.

– Secondly, the other necessary factor in making transportation difficult is badly adjusted public transportation that has associated with increasing usage of private car. Public transportation is not categorically divided and justly spread in Iran, as well as the lack of consideration to prime factors identified such as speed, convenient, safety and affordability, while a dramatic rise in urbanity required sufficient public transportation to meet public demands.

– Thirdly, inner transportation have being made to provide needs of residence, which can be decreased by appropriate planning and met by organizing land use and making more CBDs for cities in order to increase comfort when planning land use. Comfort involved itself by two parameters: time and distance.

– Finally, the lack of widely suitable pedestrian routes, which can bring pleasure and sense of safety for people, appears to result in more traffic. Lining routes have been vastly done except in pedestrian routes. The other considerable parameters have been caused traffic are mentioned in bottom:

- 1) Wrongly political and governmental measures in urbanism field
- 2) Excessive production of cars with low qualification

- 3) The lack of different levels in intersections
- 4) The absence of governmental rules in transportation

Mindful of referent parameters cause traffic, some solution will be followed:

- 1) Opting for a prior manager for traffic control in cities
- 2) Expanding comfortable, safe, widespread comprehensive and affordable public transportation, as well as extending its traditions.
- 3) Utilization of political measures such as allocating limited oil, although, it is firstly involved improving public transportation
- 4) Developing, widening, and improving routes by distinctively attaining identity of city and its structure and all of them they must be compatible
- 5) Encouraging people to walk and make them more aware of traditions
- 6) Increasing usage of Information technology in traffic control via mass media
- 7) Creating vertical parking in congested spots
- 8) Making bike riding more prevalent instead of using private car
- 9) Providing a comprehensively strategic planning in traffic control.

#### vi. Difficulties in safety of routes found in developing countries

It has been projected that more than 300000 people annually died in car accident all around the World and between 10 and 15 million people are injured. The analyses of statistics related to car accident have been worked out by TRRL shows the proportion of the rate of mortality to the number of cars, which are identified greater in developing countries than industrially developed. The rate of mortality (the number of cars are taken into account) in developing countries, especially African countries, are often between 20 and 30 times as large as it has been recorded in European countries, whereas the rate of car accidents and mortality are increasingly declined in industrial countries.

Surveys of TRRL, which have been contributed by International Sanitarian Union, demonstrate that the major reason to unripe death is car accident, which is recognized as the second cause for people aged from 5 to 44. Improving the sanitarian situation and gradual decreasing of infectious diseases make the rate of mortality in car accident as the most significant trigger, which is growing in developing countries.

The nature of car accident in industrial countries is commonly different from developing countries. For example, the injuries of commercial or public vehicles are recorded more than other type. 25 percent of the car accidents caused injuries in India has been taken place by buses, whereas this number is 4% in Britain. In this type of observation, the number of pedestrians, bike riders and slower cars injured are not counted. So it is implicitly clear that the greatest

number of injuries would be related to passengers on the roads.

#### vii. Safety of routes in industrially developed countries

One of the country firstly recognized heavy traffic as a significant difficulty in future was Britain. Two elements was partly acknowledged by Royal Commission were firstly the development of a belt around the city and secondly considering the number of travel were made. The first urbanist, also, identified this matter was Eugène Hénard, who was living in the first era of using cars, which were not steel involved in lifestyle of people. The theory of urban transportation as well as the distribution of various type of traffic was firstly conducted by him. "The Studying of Converting Paris" in order to tackle underlying problems, which were claimed more clearly by him, was published between 1903 and 1909. Traffic issues had a significant role when subways were being built in Paris. In 1906, there were only 4077 cars existed in Paris, which proportionally means one car for 660 person. Henard, although, supported the idea of constructing subway, he was contemporarily asserted the rebuilding of a route network of Paris. The primarily innovative principle in original plan suggested by him was the construction of two widely global routes interrupted each other at the center of Paris. The variety of paths surrounded Paris, in which the round boulevard was organized to substitute for dilapidated battlement, identified as the most important suggestion. He categorically divided traffic into 6 groups (traffic related official, professional, economical or commercial, social or entertaining works, transportation in relation to special occurrence and celebrations). Traffic, in addition, can be distributed in terms of quality or other traits to some distinct groups. For example, contemporary or permanent transportation, transportation steadily established, convergent or divergent transportation. He claimed that the need of public transportation can meet the demands of each kind of distinct transportation. Moreover, he did not percept designing the route network appropriate enough because of entirely awareness of the best way to achieve successful design for intersections. He wrote: the design of intersections must be inevitably asserted as a priority urgently. The first solution was to build intersections in two different levels, which are being gradually developed to seek complicated intersections with different levels are being recently built. The second method was to design with underground aisles for pedestrians at the intersections.

Countries concluded in OECD (the most industrial countries) have achieved many successful measures to make routes safer since the last 30 years. However, measures to decrease road accidents in various incidences, one of the greatest achievement in investment have been the design of routes and development of traffic engineering. Gradual exclusion of hazardous routes and utilization of safer entrance

that have significantly resulted in increasing the safety level in traffic. Nevertheless, the systematic measures, when measure have used in developed countries entirely practical in developing countries.

To some extent, developing countries are fortunate in terms of the stage their routes are, which are still promoting first stages. They have duplicated opportunities of using the experiences of industrial countries that they have gradually examined. The strategic measures have been taken by developed countries can be conducted to improving road safety. Unfortunately, repeating mistakes are being made by executives of developing countries because of the lack of the consideration to developed countries experiences. For example, direct entrance from the side of a road are allowed in developing countries, which is proved by developed countries that it can put safety at risk.

Moreover, the way of assembling meticulous assemble of statistics and correctly assessment of accidents are recognized as a significant matter, in the way that in which they should be as practical as to reach correct plan and improvement. So, before imitating strategies and measures have been taken by industrial countries, developing countries must attempt to collect statistics relevant to accidents. From the beginning, Planning with regarding to principals in relation to design roads by using safer methods from the beginning can prevent many difficulties. Even they can be used in routes have been are already built. For instance, put a halt on the transportation of in residential regions.

In developed countries, it is proved that hazardous routes can virtually be dandified in order to utilize measures relevant decrease the number of accidents. for example in which the, behavior of drivers and their decision quickly made to a route are all can bring safety.

viii. The academic methods are used in the assessment of safety in suggested plans

There are many countries that cannot dominate over problems caused by the lack of safety in their routes because of limited references and incorrect ways they are being used. Investments are being wrongly allocated and planed that can result in deficiency of safety in future. Routes are often being built by contributed budget.as probably bring more accidents because of the lack of consideration to principals in relation to safety. While, the roots can be proved to prevent avoidable accidents are categorically mentioned:

- Unsuitable management of routes
- Not appropriate designing for local condition
- The lack of ability for administrating

prevention plans

These difficulties can be improved academically and in addition have potential to be managing. By using compatibly systematic process problems that can be easily solved. In countries have fewer expertise, using more primitive plans by fewer stages

of designing, involve more study of safety in order for them to decrease accidents.

#### ix. Conclusion

In Iran, traffic and its difficulties have firstly stemmed from that plan of administrating field improvement", secondly the vast immigration of rural people to cities, thirdly , industrially developing of vehicles and using them in major cities especially in Tehran since that last50 years age. After greatly following by increase sing traffic, traffic council was run in 1967, which have been managed by municipality of Tehran. Although, acting with regard to just academic matters, the lack of consideration to people and cooperation between executives without having a major managing office are resulted in unpractical administration. It should be emphasized that considering people in plans and choosing a major manager must be recognized as inevitably vital issues. The first matter mentioned can trigger better management because of all plans provided by various offices should be are challenged by a prior manager. The second can result in making people more aware of rules related to the variety kind of transportation, as it proved the difficulties are more stemmed from traditions rather than technical issues.

#### References

- [1] Making Appropriately Traditional Attitude for Key Lost in Traffic of Tehran. (2006). *Keyhan*.
- [2] Ostrovsky, V. (1991). *Contemporary Urban Planning: From the initial roots to Athens Declaration*. Tehran: University Publication Center.
- [3] Qarib, F. (1988). *Network in Urban Design*. Tehran: Tehran university press publication.
- [4] Qorbani, Anasari, Masoud Pour Shirazi,. (2006). The traffic difficulties stem from the lack of compatibility with rellevant executives. *SiASATE Rooz*.
- [5] The lost Round in Traffic of Tehran. (2008). *Hamshahri*.
- [6] The precise image of Tehran in terms of Traffic situation and Transportation. (2001). *Payame Iran Khodro*.
- [7] Triple Problems of Traffic in Tehran. (2005). *Eatemad*.
- [8] Sharan Consulting Engineers, "Guide For Identification And Intervention In Worn Out Textures," Idepardazan Fanohonar publ., 2006.
- [9] Prdaraz Consulting Engineers , Master plan of Ghyetariye region , 2004.
- [10] M. Habibi, "Participatory Urbanism, Theoretical Research of Iran's Conditions," The Fine Arts magazine, No. 24, Winter 2006.
- [11] H. A. Laghaee, and H. Mohammadzadeh Titkanlo, "Introduction to the Concept of Sustainable Urban Development and the

Role of Urban Planning," Journal of Faculty of Fine Arts, University of Tehran, No. 6,1999.

- [12]M. Sharifian Sani, "Citizen Engagement, Urban Ruling & Urban Management," Urban Management Quarterly, No. 8, Winter 2001.
- [13]M. Sheikhi, "An Analysis Of The Role And Position Of People In The Renovation And Reconstruction Of Worn Out Textures Based On Conditions Of Iran," Ministry of Housing & City Building publ.,1997.
- [14]K. Hajipour, "The Position of the Community-driven Planning in Large Scale Urban Management," the 1<sup>st</sup> Scientific-Practical Conference on the Development of the Neighborhood, the Prospect of Sustainable Development of the City of Tehran, University of Tehran, 2004.
- [15]A. Andalib, "The Principles of Urban Renewal, the New Approach toWorn Out Texture," Azrakhsh publ., 2010.