

Challenges of getting traffic statistics in developing cities

Abstract

Developed cities pay great attention towards traffic data collection, analysis and publications. However, this is not the case in almost all developing cities. The experience of getting traffic statistics in Gaza city is explained in this article as an example of the suffering of a developing city. The available traffic statistics in Gaza city are chaotic and without good management. Traffic data are usually collected using manual traffic counting methods and for very limited periods. No formal body has been established in order to take care of such an important task. This article concludes that It is very important to start an initiative to support developing cities and to provide practical and simple solutions in order to help establishing a basic and well organized traffic database. This database should include basic and reliable data on selected key segments of the road network. Data should include regular statistics on traffic flow on specified days of the year for certain periods. Local authorities should be empowered in order to conduct their basic duties in the field of transportation. The article also concluded that local universities should take a lead in the field of traffic statistics collection and management.

Keywords: traffic statistics, traffic data, developing countries, Gaza, Palestine

Introduction

Data collection of traffic parameters such as traffic flow, speed and delay is very important for the development and enhancement of the transportation system in any city. Professionals and stakeholders in developed cities pay great attention towards data collection, analysis and publications.¹ However, this is not the case in almost all developing cities, where the process of data collection, if any, is not usually practiced in a well-organized manner.² Most developing cities also have problems in recording traffic crashes in an efficient and useful process.³ The experience of the author in his hometown of Gaza city is explained in this article as an example of the suffering of a developing city.

Background

Gaza city is the capital of Gaza Strip; Gaza Strip and the West Bank form what is called the Palestinian Territories. The current population of the State of Palestine is 4,963,211 as of Saturday, October 28, 2017, based on the latest United Nations estimates. The Palestinian Territories are still considered as occupied land by Israel even after the establishment of the Palestinian National Authority in 1994. Gaza city occupies today about 45 square kilometers (17 sq. mi) GIS Department, MoG, 2018 along the Mediterranean Sea just northeast of the Sinai Peninsula.

Discussion

The interest in collecting traffic data in Gaza city is very limited. The available traffic statistics in Gaza city are chaotic and without good management.⁴ In many cases traffic data are collected for solving a certain problem or for developing a particular road. In some cases, it is also possible to get traffic flow statistics from reports produced by students of the College of Engineering at the local University of Gaza. The manual traffic,⁴ counting method is the only method used to conduct traffic counts on the streets of Gaza. Therefore, traffic flow counts are usually conducted for few hours and for a very limited number of days during the year. The year 2016 was special in this regard because a group of students decided to collect

traffic flow data, as part of their graduation project, for a period of 24 hours for seven consecutive days.⁵ This exercise was carried out on three main roads of the city. The gloomy part of the story is that this information has not yet been published in a decent way, and therefore is not yet readily available for professionals or researchers. This is almost the destiny of most traffic flow counting exercises conducted by students. They end up in small unpublished reports without being well kept or well sorted or properly circulated. No formal body has been established in order to take care of such an important task. The Ministry of Transport wishes to endure such a duty; however they lack the expertise, the resources and probably the will. The Municipality of Gaza may also bear this responsibility; however, they lack the capability and the financial resources. The Palestinian Central Bureau of Statistics sometimes publishes few traffic related but incomplete information.⁶ The issue of traffic statistics was raised several times by local university transportation professors,⁷ and at a workshop held in December 2016; The most important recommendations of the workshop was the emphasis on the necessity for the coordination between the Ministry of Transport and the Palestinian Central Bureau of Statistics in updating statistical data in the transportation sector, and to form a traffic statistics center in coordination with relevant institutions. It was also recommended that it is very important to make use of the data collected and the research conducted by students of the local University in the transportation sector. However, the implementation of this recommendation is far from being fulfilled. It is believed that the above situation is very similar to many developing cities in several countries of the world. It is therefore; very important to start an initiative to support such cities and to provide practical and simple solutions in order to help establishing a basic and well organized traffic database. This database should include basic and reliable data on selected key segments of the road network. The data should include regular statistics on traffic flow on specified days of the year for certain time periods. Other traffic related data should also be collected including population, number of registered vehicles, vehicle types, number of licensed drivers, total vehicle kilometers of travel per year, etc. Other information such as the length of the paved and unpaved road network in the city, traffic speed, road crashes, travel

time and delay on the main roads should also be included. The support of developing cities should also be extended into providing necessary equipment for data collection and analysis. There is also a need to provide useful software packages that can be used to carry out this task. Training is certainly of great importance both to the existing staff and also to the new generation of traffic engineers who are expected to lead in the field of transportation in the coming few years. Special interest should be paid to the local authorities in order to make sure that they have the capacity in terms of expertise and equipment that make them able to conduct the basic duties under their responsibility in the field of transportation.

Conclusion

Finally, it might be worthwhile sharing some local initiatives in tackling this problem. During the past few years lecturers on transportation related courses at the Islamic University of Gaza are directing almost all practical and field work of civil engineering students towards collecting traffic data at carefully selected locations. These locations have been coordinated with officers at the Ministry of Communication and Transportation. The collected traffic data include traffic flow counts, parking surveys as well as spot speed studies. On the other hand, MSc students are also encouraged to conduct research and collect data focusing on local traffic issues. It should also be mentioned that hourly and daily traffic expansion factors have recently been developed for three main roads in the city of Gaza. This was based on traffic flow data collected by final year students during their graduation project.⁸ These factors have been made available to all professionals and researches assisting them in converting very short traffic flow counts into 24-hour counts and in estimating the Average Daily Traffic (ADT) easily and with a small margin of error.⁹

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Conflict of interest

Authors declare that there is no conflict of interest.

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