THE SOLUTIONS TO TRAFFIC CONGESTION IN ISTANBUL

Abstract

Public transport in urban areas of the developing world is highly complex, due to the systems involved, the large number of origins and destinations, and the amount and variety of traffic. Istanbul is typical of these issues. Due to unplanned urbanisation over the past decades, the city is now facing a severe urban transport crisis, such as noise pollution, traffic congestion, traffic accidents, etc. These crises are mainly due to a limited transport infrastructure, a rapid increase in motor vehicle ownership and poor public transport services, etc. This study will analyse the urban transport systems of Istanbul (i.e. minibus and bus) and the extent and cause of the traffic congestion faced by the city. Through a review of the literature, this essay will attempt to clarify the ways in which the city can mitigate the above mentioned issues and improve its public transport.

Key Words: Istanbul, Public Transport, Urban Transport, Rapid Transit, Minibuses, Metro.

İSTANBUL'DA TRAFİK SORUNUNA ÇÖZÜMLER

Özet

Hızla gelişen dünyada kentsel alanlardaki toplu taşıma sistemleri hızla artan araba sayısı ve trafik, karmaşık kent yapıları ve artan nüfus gibi çeşitli etkenlerden dolayı sorunsal bir hal almış durumdadır. Son dönemlerde yaşanan kontrol edilemez kentsleşme ve hızlı nüfus artışına bağlı olarak büyük metropoliler başta hava kirliliği olmak üzere, trafik ve araba kazaları gibi birçok önemli soruna karşı karşıya kalmaktadır. Bu sorunların büyük kısmı az gelişmiş toplu taşıma sistemi ve trafikteki özel taşıtların artışını ve artışın hızı artışa dayanmaktadır. Bu çalışmamın temel amacı İstanbul'un toplu taşıma sisteminin analiz etmek ve şehrin karşılaştığı trafik sorunun boylamını ve nedenlerini incelemektir. Daha sonra ilgili sorunlar için çözüm önerileri belirtilerek toplu taşıma sisteminin iyileştirilmesi için yapılması gereklili olan asgari reformlar önerilecektir.

Anahtar Kelimeler: İstanbul, Toplu Taşıma, Kentsel Ulaşım, Hızlı Ulaşım, Minibüs, Metro.

1 The University of Leeds, Urban and Environmental Issues, A Phd Student, emrahylsy@hotmail.com
INTRODUCTION

The city of Istanbul is located on both sides of the Bosphorus, on the narrow strait between the Black Sea and the Marmara Sea. It is the largest city in Turkey, and during the second half of the 20th century has experienced rapid industrialisation and urbanisation (Geymen, 2013). Since the 1950s, Istanbul has been the main destination of an influx of large scale migration from rural to urban areas. During this time, Istanbul has experienced rapid industrialisation and unplanned urbanisation, and has developed a large number of serious issues. These include rising density, congestion, traffic jams, pollution and a scarcity of urban land (Uzun, 2010).

The problems and peculiarities of rapid urbanisation have been constantly present in Istanbul over the past decades. In particular, traffic congestion has been an issue for all those within the city. Even though Erdogan Bayraktar (the previous head of Turkey's Housing Development Administration and Minister of the Environment and Urbanization) stated that 2011 would become the country's 'year of urban transformation', the growing traffic congestion continues to paralyse daily life for commuters, who are increasing finding the time spent in traffic to be unbearable (Karaman, 2013). What is it that causes such traffic congestion in Istanbul, and in what ways can the urban government solve this issue?

In order to answer the above questions, this essay will attempt to analyse the public transport system of the city and recommend a number of solutions to reduce traffic congestion. It has three objectives: the first is to provide an analysis of unplanned urbanisation in Istanbul after the 1950s, in order to clarify the reasons why the city has faced urban problems. The second is to investigate the city’s public transport. The third forms a recommendation of alternative means of mitigating the above issues.

1. Rapid Urbanisation in Istanbul

In order to describe the transformation of the urban transport system of Europe's largest city, there needs first to be an investigation of Istanbul's population, which is currently growing uncontrollably, as well as its public transport demands. In 1945, Istanbul had a population of 1,078,000. Internal immigration into Istanbul increased rapidly after the 1950's, due to it being the fastest growing industrial centre. Its population has risen by over 1,000% within 60 years, from approximately 1.5 million in 1950 to 13 million in 2007 (Karaman, 2013). Rural-urban immigration has been the most important force driving this rapid population growth and outward expansion of its urban areas (Keleç, 1990). This raises the question of what caused this sudden rapid growth? After the Second World War, Turkey experienced serious economic transformation from being primarily rural/agrarian to being primarily urban/industrial. It has become a popular economic destination for both a large numbers of low skilled unemployed rural migrants seeking jobs, and business owners looking for cheap labour and an extensive local market (Kucukmehmetoglu and Geymen, 2007; Oz and Eder, 2012).

This rapid economic change led to an increasing influx of internal migration into Istanbul from rural areas of central and eastern Turkey. In parallel with this rapid urbanisation, the number of vehicles on Istanbul's roads increased dramatically. The adult population continues to increase, leading to a greater desire for personal transport. The main reasons behind traffic congestion are an increased number of cars on the roads. According to the Road Motor Vehicle Statistics (2012), the number of registered vehicles in Istanbul was 2 million in 2008, increasing
to approximately 3 million in 2012 (TSI, 2013). Moreover, approximately 2 million of these consist of cars, meaning that residents use their personal vehicles more than public transport, thus leading to the increase in the numbers on the roads. The reasons behind this preference for owning a car rather than using public transport are related to the poor quality of public transport and the undeveloped rapid transit system.

The public transport system has remained insufficient to meet the needs of the growing population. Rapid population growth has created a major challenge for the Istanbul Metropolitan Municipality and the Turkish government to provide good transport infrastructure and the services needed to sustainably support these communities. Thus, increasing number of vehicles, along with the undeveloped public transport system, are the main reasons for increased road congestion. There is a need for an increased analysis of public transport in order to understand the reasons why the majority of residents in Istanbul avoid using it.

2. Overview of Urban Transport in Istanbul

Minibuses and buses have come to form the main body of the public transport system in Istanbul (Hennig, 2011). Both minibuses and the aging bus system have a number of disadvantages compared to the rapid transit system. Firstly, they cause noise and pollution, and their emissions are harmful towards the environment. Secondly, they led to serious traffic accidents and traffic jams, the latter being the main transport issue in Istanbul.

2.1. Minibuses

Private minibuses form the main body of the public transport system in the city, generally with a seating capacity of approximately 10 seats. However, they always carry more passengers than their capacity, and (particularly during rush hours) they carry more straphangers than seated passengers (Sanli, 1970). Few wish to stand during a long journey and hence this is one reason why most prefer using their own cars to minibuses. According to statistics of Istanbul Metropolitan Municipality, they carry approximately 2 million passengers daily out of approximately 6 million in the inner city, and there are more than 56 thousand minibuses on the roads of Istanbul (IMM, 2014). What does this mean for the traffic in the city?

Figure 1: An illustration of the number of minibuses in Istanbul.

Source: http://www.objektifhaber.com/
As it can be seen from the above photograph, this leads to serious traffic problems. A major city like Istanbul needs a higher passenger capacity transport system, rather than minibuses, in order to meet the needs of a huge population. A further disadvantage of minibuses is traffic accidents. According to traffic accident statistics (2012), the number of minibuses involved in accidents causing death and personal injury is approximately one thousand (TSI, 2013). Thus, minibuses are a threat to personal safety. A passenger on any type of public transport demands security during their journey, but the traffic accident statistics reveal that minibuses have caused a large number of accidents in 2012. This is a further reason for Istanbul residents preferring not to use public transport. Due to their low capacity and insecurity, the use of minibus is not an effective transport system for Istanbul, being more suitable for small cities and country towns.

2.2. The Bus System of Istanbul

The issues of the poor performance of the bus transport system in Istanbul are highly visible. As a native of Istanbul, who frequently uses buses, I can testify that buses (for both myself and for the majority of passengers) are uncomfortable, expensive, lacking in security and emit a great deal of noise and pollution. The majority of buses belong to the 'Icarus' brand, and are both uncomfortable and with low passenger capacity (Issever et al., 2002). During the summer most passengers suffer from the heat, due to the lack of air conditioning.

Figure 2: An ‘Icarus’ Bus in Istanbul

In addition to their poor quality, they do not always operate during evenings, holidays, or weekends. According to statistics of Istanbul Metropolitan Municipality, approximately 2 million passengers travel by public bus, and 7 thousands buses are operated daily (IMM, 2014). This implies that they must carry more passengers than their capacity, and therefore are generally very busy so that any passenger who can find empty seat feels themselves to be very lucky. Hence, it is the poor standard of the bus system that tends to force passengers to use their individual cars. However, it is important to note that an increasing number of old buses have been replaced with a more modern bus system.
3. What Are the Solutions to Traffic Problems in Istanbul?

As a result of a rapidly increasing population within the past 60 years, Istanbul is a booming city facing immense difficulties in accommodating an additional 84,000 cars annually (Urban Age, 2011). Furthermore, this increase in motor vehicles is more rapid than the population growth in the city (Hennig, 2011). According to official statistics of TSI, there are approximately 3.5 million individual cars in Istanbul (Turkish Statistical Institute, 2013). It is estimated that in ten years’ time, Istanbul's population will be more than 22 million if the current population growth continues (IMP, 2005). This fact means that vehicles will also continue to increase during this time. A rapid increase in motor vehicles and a reduction of traffic congestion is mutually exclusive. If there are insufficient buses, trams, or local trains, then more residents will be forced to use their cars to travel to work, etc.

In what ways does an urban government reduce traffic congestion in the city? The answer is related to the means of encouraging the use of public transport, or of discouraging the use of individual cars. There are two fundamental ways to encourage the use of public transport. Firstly, dealing with the institutional and structural bias in the planning of urban transport systems towards motorised traffic, and the overall urban development that transforms minibus and bus transport through modernisation. Secondly, urban government should give increased priority to rapid transit and sustainable transport.

3.1. Transformation of Traditional Transport Through Modernisation

As previously discussed, minibuses and buses have formed the main body of the traditional public transport system, and have remained insufficient to meet the needs of a growing population. Istanbul's public transport network needs to constantly improve, with dedicated bus lanes, express intercity bus services, and new and improved bus services offering fast, reliable and less polluting means of operation, in order to attract the car users to public transport. Firstly, minibuses should be removed, due to the fact that their passenger capacity is unsuitable for such a large city as Istanbul and they cause traffic congestion.

Secondly, Istanbul Metropolitan Municipality should transform the old bus system to better serve the needs of their population and the environment. They should provide improved facilities, including Wi-Fi access, comfortable seats, real-time journey information at bus stops and improved accessibility. Most importantly, they should also be provided with air conditioning. These reforms would encourage car users to make better use of the public transport system.

3.2. Rapid Transit System

Rapid transit can be defined as a type of high-capacity public transport system (unlike buses and trams) generally found in a metropolitan area. For rapidly expanding cities (such as London, Paris and Istanbul), a rapid transit system is increasingly seen as an integral instrument in minimising traffic congestion, local air and noise pollution (Wright, 2010). International standards and practices require that major cities with a population of over 1 million should have a mass transit system (e.g. metros, light trains, pre-metros, commuter trains and monorails) in order to respond to the growing transportation demands of a city (Qureshi and Huapu, 2007). The most important feature of the rapid transit system is that it does not interfere with road or pedestrian traffic (Laporte et al., 2013), and so is generally the best public transport option for cities facing the challenge of traffic congestion.
One of the best known rapid transit systems is the metro, which enables passengers to cover long distances in a matter of minutes without causing traffic congestion. The metro is a typical feature of large cities all over the world. For example, London has 402 kilometres of track (the second largest public metro system after Shanghai), which carries approximately 3 million passengers every day. Similarly, the Paris metro has 214 kilometres of track, carrying 1.5 million passengers daily as the second busiest metro in Europe after Moscow (Business Traveller, 2012).

By contrast, Istanbul has only 115 kilometres of track, despite the fact that it forms one of the largest urban agglomerations in Europe (Ocak, 2009; Ayaydin et al., 2008). This demonstrates that, in spite of its increasing population, Istanbul has an undeveloped metro network system when compared with other major cities (such as London and Paris). Rapid transit is essential to encouraging car users to use public transport. A rapid transit system can play a key role in improving existing public transportation and reducing traffic congestion in Istanbul. Therefore both the Turkish government and Istanbul Metropolitan Municipality should give increased priority to the metro in public transportation.

Conclusion

This paper has focused on Istanbul’s most important urban transport problem (i.e. traffic congestion). After the 1950s, a serious economic transformation from rural/agrarian to urban/industrial led to an increasing influx of internal migration from rural areas of central and eastern Turkey to Istanbul. During this rapid urbanisation, the city experienced serious problems, such as rising density, congestion, traffic jams, air pollution and a scarcity of urban land. In particular, traffic congestion has always been present in Istanbul.

There are two main causes of the current traffic issues in the city. One of the main reasons behind increased congestion is that there are an increased number of cars on the roads of Istanbul. In parallel with rapid urbanisation, a car-reliant population in the city has increased, and more cars fill the roads. The second reason is a poor public transport system. Minibuses and an old bus system have been characterised by slower speeds, longer trip times, and increased vehicular queuing. This is a further major factor discouraging most of Istanbul’s residents from using public transport.

This article has suggested two solutions to the current traffic issues in the city. Firstly, minibuses should be replaced by high-capacity public transport, and buses need to be transformed through modernisation, providing improved facilities such as Wi-Fi access and comfortable seats. The second is that urban government should give greater priority to rapid transit. In order to overcome this vulnerability and become more sustainable, the city needs to develop intermodal transport solutions, such as the metro. Without this, it will continue to suffer from traffic congestion.
REFERENCES

AYAYDIN, Nejad; EKICI, Zafer And WALTER, Herbert (2008), “Metro Istanbul-Kadikoy, an underground station close to the sea and below a historical building”, Geomechanics and Tunnelling, 1 (3), 189-196


