Traffic Congestion in Kabul City and Suggestion for Sustainable Development

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ABSTRACT

Traffic congestion is a global problem all over the world but very harmful for developing countries like Afghanistan. This study intends to explore the relation between traffic congestion and urban dwellers selection behavior on current location for living, and also examine the causes and effects which exist behind traffic congestion. A case study approach has been adapted and Kabul city is taken as a case since it is capital city and has big regional connection with other areas. To obtain comprehensive picture about the cause and effects of Kabul traffic congestion, the study also depend on various published documents and primary data has been collected through the semi-structure questionnaire and group discussion. This study reveals that there are branches of reason such as shortage of necessarily urban infrastructure, improper human behavior, poor traffic management and demo-graphically populations' problems which are causing traffic congestion in Kabul. Many issues such as social, environmental, economic and air pollution are resulted by the traffic congestion. This study recommends that government need to take steps for strengthening the construction of transportation infrastructure, implementing the traffic law, increasing the number of public buses, decentralizing the government agencies and commercial center, improving traffic management system and applying electronic system for traffic management for reducing traffic congestion and ensuring comfortable city life. This study will help researcher, government policy planner and decision makers to improve the appropriate road safety measures for passengers.

Keywords: *Traffic congestion, Afghanistan, Transportation system, Urban dwellewer.*

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Highlights of this paper

- This study focuses on traffic congestions in Kabul city.
- It also presents on how traffic congestion waste a huge time and cost.
- This study suggests solution for traffic congestion through empirical evidence.

1. INTRODUCTION

Traffic congestion is one of the most important problems in cities around the world. This issue not only imposes huge costs on governments and people, but also causes many problems such as air pollution, uninterrupted energy consumption, waste of time and other economic and social problems (Babakarkhail, Kachi, & Tsukahara, 2018). Traffic congestion in Afghanistan, especially in Kabul has become a very common problem. As the capital of Afghanistan, Kabul is one of the largest commercials, economic and cultural hubs in the region with significant transit trade importance (Li, Xiong, & Wang, 2019). Kabul is recognized as the fifth fastest growing city in the world and is approximately 1800 meters above sea level (Ahmadzai, 2019). Kabul has 4,523 km area and about 56.3% area is made up of mountains and rugged terrains and only the remaining 37.7% is flat. The mountain and rough terrain in Kabul have made transportation system more complicated. According to the information provided by the Afghanistan Central Statistical Office in 2019, Kabul's population estimated about 4,860,880 which including 51% male and 49% female. Nearly 83% of Kabul's population lives in the city and the remaining 17% live in the suburbs of Kabul and the population density reaches 1074 per km^2 (Babakarkhail et al., 2018).

Currently, it is more than 100000 people are adding to Kabul's population each year (UNHCR, 2012). According to UN forecasts, Afghanistan's population will grow to 48 million by 2030 and 64 million by 2050. The population of Kabul city growing rapidly from the population of around 500,000 in 2001 to a Central Statistical Organization (CSO) reported population of around 5 million people in 2018 (CSO, 2018). Although Kabul's population is growing rapidly, Kabul's municipality due to lack of facilities and lack of necessary urban infrastructure not able to provide urbanization facilities for millions of people. Kabul is administratively divided into 14 districts, 22 sub-districts areas, and 1053 villages. Kabul as the capital of Afghanistan was completely destroyed during the civil war in the last three decades of the 20^{th} century. All the infrastructure of the city, especially the transportation system, roads and so on was damaged strongly. After the establishment of a new government in 2001, the new page was opened in Afghanistan history. The reconstruction work of has begun by the support of the United States and the international community donors. Currently, it is About 60 percent of Kabul's roads are asphalted and the rest of roads still are in muddy status after 2001 due to the rapid economic growth, well educations, and employment opportunities. The number of populations highly immigrate to the Kabul city and private vehicles rising day by days (Maji, 2017). According to reports of traffic department, there are more than 800,000 vehicles available on the Kabul narrow roads at the current time, while Kabul's roads are only capable to accommodate 50 to 60 thousand vehicles. About 150 to 200 vehicles are adding to the number of vehicles every day by registering to the traffic department. Kabul is considered one of the most disorganized cities in the world in terms of urban traffic. Although the Afghan government has taken some steps to reduce congestion, and is trying to alleviate the problem but the traffic congestion is getting worse day by day. The problem of traffic congestion is more attributable to bad traffic management by officials and non-compliance with traffic laws by road users (Khan et al., 2018). The city transportation system helps the free movement of passenger and good which is sometimes problematic for social and economic activities. Kabul city currently has only one mode of public transportation as a system, which is The Millie Bus Service. The national buses company was established in 1975. It operates under the supervision of the Ministry of Transport and currently has about 332 vehicles assisted by donors. These buses operate on 52 urban lines. The buses service supply is very low compared to the demand of Kabul city resident.

There are several factors which are caused traffic congestion in Kabul city. This article focuses on a comprehensive understanding on cause and effects of traffic congestion to the urban dwellers in Kabul city from the point of views different income dwellers and analyses the all causes and effects which are negatively impact on their economic, heath, environment and social life. This study also proposes some possible policy recommendations to improve the traffic situation. Therefore, this study intends to explore the relation between traffic congestion and urban dwellers selection behavior on current location for living, and also examine the causes and effects which exist behind traffic congestion.

2. METHODOLOGY

This study conducted by both qualitative and quantitative approach. To obtain comprehensive information about traffic cause and effects on the social life of Kabul city dwellers as well as understanding why city dwellers use the current location for living. The study adapted semi-structure questionnaire and group discussion for primary data collection. Totally 105 dwellers living in different city (including 70 male and 35 female) were selected through a random sampling. The semi-structured questionnaires designed and distributed to the respondent and conducted face-to-face interviews. All data information was coded and entered in excel sheet and analyzed very carefully. To get comprehensive picture of Kabul traffic congestion, the information data was carefully triangulated and interpreted after group discussion by 6 individual professional teams.

3. RESULTS AND DISCUSSION

3.1. Demographic Characteristics of City Dwellers

In order to know the transport demand from different groups, this study assesses the relationship between housing choice and transportation choice. Most of Kabul's urban dwellers are immigrated from the other province of country and they are now live in low-cost areas. This study asks to mention why they decided to choose their current location for living. The questionnaire was distributed to 105 various profession and groups transport users. The result shows that around 90% male and 60% female selected work facilities as major reason for choosing Kabul city; they believe that Kabul city has lots of work opportunities Table 1. Amrullah, 26 years-old a worker commented: "*I am from Takhar province, there is no job opportunity in Takhar province. So, I brought my family to Kabul to find a good job and earn money to support my family*". Table Presents more than 70% of male and female have selected city to have enjoy convenience life; Shamsia, 27 years old , a school teacher states: "*of course, Life in Kabul is very comfortable; all living amenities such as schools for children, equipped hospitals and living facilities are provided for us*".

Table-1. The reason for living in the city by various salary groups.

Major characteristic	Variable categories	Number		Percentage	
		Male	female	Male	female
	Work Facilities	59	21	90.77	60.00
	Life convenience	48	26	73.85	74.29
The reason for the living in current location of Kabul	Educational facilities	46	31	70.77	88.57
	Permanent living	19	25	29.23	71.43
	House low price	37	15	56.92	42.86
	Medical facilities	21	15	32.31	42.86
	Transportation facilities	13	15	20.00	42.86
	Security stability	28	25	43.08	71.43

Source: Field survey, 2019.

The majority (70%) of the male and 88% female choose to live in Kabul for the having Education facilities. Table 1 shows that educational facilitation for both male and female is an important variable to live city; Salim, 23 years old, a university student said: "*the education opportunity in other provinces of Afghanistan is very limited, i believe that i couldn't continue my university if I was not in Kabul*". Table states the quantity of living permanent female are more than male. Because some male from other provinces living temporary in Kabul for working without their families. It is almost 71% of female and 29% male living in Kabul for permanent Living. For the low house price reason almost 58% male and 42% female selected living location. Table shows around 32% male and 42% female selected living city to have medical facilities. For having transportation facilities, it is around 20% male and 42% female choose living city. The survey identified that it is about 71 percent female and 43 percent male answered, having security stability is the main reason that they live in Kabul. Ahmadullah, 45-year-old, an Engineer state: "*You know that in most of Afghanistan's provinces there is no stability, our families cannot live in peace, our security is threatened at any moment, but security in Kabul is relatively better, so our families decided to live in Kabul*".

Table-2. Summary of the interview about causes and result of traffic congestion in Kabul city.

Causes	Effects
Narrow roads spaces	Roads are crowded traffic accidents rising
Lack clear lane for vehicles and bikes	Vehicles, motorcycle, bike, carriage and pedestrians use from the same roads causing traffic congestion and traffic accidents
Lack of overpass and underpass for pedestrian	Pedestrian passing from the roads causing accident
Lack of traffic digital signals and light on the roads	The drivers and vehicle users are not following a specific digital system and disorderly driving on the roads
Kabul's urban traffic system has low capacity	The capacity of roads in Kabul is designed for a population of about 500,000. The population exceeds the capacity of the road of the city
Broken and bad roads situation	Roads curves, potholes, rugged road are cause serious accident and vehicle destruction
Illegal parking vehicle on the roads	Drivers are usually blocking the road space by parking their vehicles on the roadside.
Lack of terminal station for the public buses and private cars	The buses and private vehicles stand at the roadside for loading passengers, making the roads crowded and congested.
Illegal cart and small shop activities on the roadside.	Blocking roads by shopping on the roads.
Traffic police and traffic department corruption.	Distributing of illegal driving licenses by traffic department and the way of illegal earning money from the drivers are rising.
Roads blocked by government agencies.	Due to security concerns, many roads have been blocked by the government agencies and foreign embassies. This has doubled the traffic congestion.
Drivers does not follow the traffic rules.	The number of people injured or died by road accidents is rising.
Officials does not follow the traffic law.	Violating traffic law by the government official and parliamentary members made people to disbelieve in the rule of law.
VIP Blocking roads	Wasting time, annoying the citizens by closing the roads even for hours.
Illegal Overtaking of drivers	Injured of died peopled in the sudden accidents.
Old transportation on the roads	Polluting the weather by firing fume or fuel burning and broke on the roads.
Too much private vehicles on the roads	The number of private vehicles exceeding the capacity of road in Kabul city
Insufficient buses in the city	Many areas of Kabul due to lack of buses still using private cars.
All government agencies and commercial centers are concentrating in one area.	The influx of people into the area at early morning and returns at night, led to road closures and blockages.
Too much population in Kabul	Returning of immigrants and population density is rising.
High speed driving	Cars will be out of control and cause accidents.

3.2. Common Causes and Effects of Traffic Congestion

In the Kabul city, traffic congestion has become a part of people's life. In order to know and carefully analyses the causes and effects of traffic congestion in Kabul, we interviewed with the city dwellers by asking : What are the

common causes and effects of traffic congestion in Kabul city? The summery of interview about cause and effects of traffic congestion in Kabul city identified presented in Table 2.

According to the above data table which collected by the interview, the factors which are caused traffic congestion in Kabul city are divided in the below four categories, which are distributed as follows Table 3.

Table-3. The analyses of causes and effects of traffic congestion in Kabul.

Causes of traffic congestion		Effects of traffic congestion	
Indicators	**Factors**	**Indicators**	**Consequences**
Lack of infrastructure	Lack of side walk spaces Insufficient parking Insufficient terminal station Insufficient overpass and underpass Lack of road lights and traffic signals Lack of rail and subway. Lack of proper roads. Lack of vehicle's lane.	Social effects	Accident Crowd Quarreling Harassment Wasting time
Improper human behavior	Ignoring traffic law Illegal overtaking High speed driving VIP blocking roads. Agencies blocking roads. Stop stalls/ vendors on the roads Car parking in wrong place.	Health effects	Headache Breathing problem Tiredness Mental pressure Physical discomfort Eye irritation Sweating
Demographic problems	Population growth Excessive private vehicles.	Environmental effects	Air pollution Sound pollution
Weakness of system and management	Insufficient public transportation. Poor traffic management and monitoring. Excessive security check points. Excessive old car parking on road. Corruption of traffic police.	Economic effects	Monetary losses Losing jobs

Source: Field survey 2019

3.2.1. Shortage of Infrastructure

The roads and transport system of Kabul are designed for less than one million population, but the current population of Kabul reaches more than six million people. The roads of Kabul city are very narrow. There are no road signals on the streets to indicate the direction or route to the drivers. This issue makes many drivers confused and often go the wrong way (Li et al., 2019). There are also many problems in urban transportation planning. For example, overpass and underpasses are not considered for pedestrians. They often illegally crossing on the road, and causing more traffic congestion even serious traffic accidents (Ali & Faraj, 2013). The lanes of vehicle, buses, bikes and sidewalks are not clear. It is often bus, small cars, trucks, motorcycles, bicycle and even carriages driving on same roads. Most of the crossroads at of the city do not have necessary traffic lights, which is caused law ignoring and disorder on the roads (Ali & Faraj, 2013). Meanwhile the lack of vehicles parking in Kabul city makes drivers to block the road space by parking vehicles on the roadside. Lack of terminal stations for the public buses and private cars is another road problem that led buses and private vehicles stands at the roadside for loading their passengers (Noori, 2010). However, most of roads in Kabul are now paved, but the road conditions are very bad, many roads are not flat, and there are even many large potholes on the roads, which poses a great hidden danger for the occurrence of traffic accidents (Nugmanova, Arndt, Hossain, & Kim, 2019). In remote areas of the city, transportation facilities are backward. In most areas, there are no tarmac roads. When it rains, these roads become very muddy and the vehicle is difficult to drive normally (Sarker & Jie, 2017). In addition, the alternative

infrastructures such as railways, subways, etc. which could be an alternative urban transport system, have not been considered in Kabul in the city (Ockenfels, Cramton, & Geddes, 2018).

3.2.2. Lack of Law Implementation and Improper Human Behavior

Bangladesh Firstly, the traffic law certainly not implemented. Traffic law in Kabul has been a slogan and has never been implemented. Most of drivers are often not-trained and unfamiliar with traffic laws, and they are not followed traffic rules (Solé-Ribalta, Gómez, & Arenas, 2016). The typical behaviors of drivers and pedestrian in Kabul city who do not follow the rules including: ignoring the traffic laws, speeding and illegal overtaking, not driving on lanes, loading over-limits, not caring to police guidance (Sarker., Bingxin, Sultana, & Prodhan, 2017). Ahmad Shah, 42 years-old, a taxi driver stated; "*You know that fifty percent of those drivers who are traveling around the Kabul city do not have a driver's license or have a fake driving license, they are not aware of traffic laws*". Zibihullah, 29 years-old, a traffic police complained: "*Unfortunately the drivers are very reckless, if they obey the law, there will be no controversy and no congestion*".

Secondly, the Roads blocking due to the VIP authorities passing. It is often seen the traffic laws are constantly violated by many government officials and parliamentary members; parliamentary members who make oversees law enforcement do not comply with the traffic law (Sun et al., 2019). For example, if any government official or parliament member crosses the roads, the roads will block for the public vehicles even for hours.

Thirdly, many roads blocked by the agencies. Afghanistan suffers from instability. Due to security concerns, security forces have blocked a large number of government agencies 'and foreign embassies roads and not allowed public vehicles to pass the roads. Blocking of roads reduces the quantity of the city roads and doubled the traffic congestion in the Kabul city. Taheri, 25-year-old, a banker explained, "*Unfortunately of Security is very bad, in order to this issue all government agencies, foreign embassies and international organizations have blocked roads for their own safety. Thus, people because of the over congestion cannot get to their works on time*".

Fourthly, lack of vehicle parking. Due to the lack of Parking spaces on Kabu's roads has led drivers to park their vehicles everywhere on the roads and close the roads. Ahmadullah, 42 years-old, a Shopkeeper said: "*We cannot just blame the traffic police and government for the traffic congestion, it is also related to the disorder of people themselves; because there is no parking places, most of drivers park their cars on the roadsides, causing congestion*" And also, there are many vendors which are occupied roadside spaces by their carts, stalls and carriage. This issue has doubled the congestion of the roads in city.

3.2.3. Private Vehicle and Population

The number of private vehicles exceeds the capacity of the road in Kabul. The Kabul city transport system is designed for 50 to 60 thousand vehicles, while according to official statistics, the number of vehicles in Kabul has estimated to one million vehicles which is several times more than the capacity of Kabul. This large number of cars in a small town naturally brings traffic congestion. Burhanuddin Noori, 32 years-old, a University Lecture stated: "*The capacity roads in Kabul can accommodate about 50,000 vehicles, but currently, more than 600,000 vehicles have been registered in Traffic Bureau, without the vehicles which use by the government and it is almost 150 to 200 vehicles adding to this number everyday*".

Fast Population growth become a serious issue in Kabul. The city of Kabul currently has a population of more than 4.8 million populations and it is rising. Many citizens going to Kabul from all over the country due to job opportunities, security stability, life facilities. Large numbers of Afghan refugees also have returned from overseas to Kabul are factors that has contributed Kabul growing population. Due to the large number of population, the

municipality of Kabul has not been able to carry out its plan (Abane, 1992). At the result, most of Kabul's remote roads have been built without a standard plan of municipality by the people. This naturally causes a lot of traffic problems.

3.2.4. Poor Transportation System and Management

Firstly, insufficient Public transportation. In Kabul city there is only one mode of public transportation as a system, which is The Millie Bus Service. Compared to private vehicles, the Kabul public transportation System operating very poorly in Kabul; there are low number buses running on the 52 municipal lines. There are also still no buses in many areas of Kabul. People use their own private vehicles to solve to solve their transport demands (Babakarkhail et al., 2018).

Secondly, poor management system. Due to improper management, traffic rules are not respected by vehicle users. Almost various vehicles, bikes, carriages and cart are running on the same road very chaos. The illegal behavior such as speeding, illegal overtaking, and overloading are rising day by day. There are many old vehicles on the roads that should be stopped by the police, but there are still working on the roads (Davenport, 2011). Many vehicles are often overloaded. On the streets of Kabul, we often see such a scene, that the car only allows four or five people, but often loaded seven or eight people, just like performing acrobatics, passengers are very worried about it.

Thirdly, corruption of police. One of the Kabul traffic congestion reason is the presence of corruption in the traffic police. There are many problems which is related to traffic corruption, such as allowing carts holder to place their carts on the roadside to do shopping by paying amount of money to the police (Habibzai, 2016). Taking money from drivers while controlling driving license, vehicle license or monitoring bad driving or illegal behavior of drivers while driving. There are also many driving License Illegally distributing to some driver by getting money and so on. These issues causing more congestion. Satar, 34 years-old, a taxi drivers said, "*As you know, most of the private car drivers in Kabul have not even been trained for a day, and they are unfamiliar with traffic laws. Because they paid money the police and the police issued driving license without any training and sent it to their home.*"

In addition, on the Kabul roads due to the lack road capacity there are no specific stations for the buses and private cars to load their passengers, so the traffic police taking money and illegally allow vehicles especially privates vehicles to park on the road and load their passengers (Kenworthy, Newman, & Lyons, 1989).

Fourthly, concentration all agencies in one area. The majority of government agencies and business centers are located in one part of Kabul. It has caused an influx of people into the area early in the morning and returned to their homes at night, which has led to the closure and blocking of roads.

All these above factors are responsible and created traffic congestion in Kabul.

3.3. Negative Impacts of Traffic Congestion

According to the respondent's response, the current state of urban traffic and traffic congestion in Kabul affected by the social, environmental, health and economic impacts.

3.3.1. Social impacts

The social negative impact of traffic congestion in Kabul city were classified as wasting time to do dairy activities losing recreation time, delayed destination in emergencies situation, sexual harassment, security treatment, concern of family from accident or occurring anything, rising vehicle operation (Sarker, Hossin, Min, & Aktaruzzaman, 2018) and fuel cost, parents fear to send children to school and late to the work subcategories (Kerner, Rehborn, & Aleksic, 2000). On average, around 75% of male and 77% female complained about wasting

their time to do their daily activities due to traffic congestion in Kabul city. As well more than 76% male and 57% female responded that the traffic congestion causing them to lose their recreation time. Hamid Ghani 48-year-old, a government staff said, "My children are very tired at school during the week. To change the weather and relieve their tiredness, we often plan to go for a weekend of fun. But due to the traffic congestion, we often wait several hours to reach our destination". The study showed that 84% of women and 75% of men responded that traffic congestion had delayed their destination in an emergency situation. Sexual harassment is a very common phenomenal in the private and public transportation of Afghanistan at the present time. More than 87% female and 39% under 25 years old boys are suffering from sexual harassment in the public and private's transportation. Especially the sexual harassment against female by the buses, private cars drivers and passenger is increasing day by day. Nasima, 23 years-old, a University student stated, *"You know that the sexual harassment of women in Afghanistan has become a bad culture among men. I go to college by the Coaster car - everyday. I am always harassed by drivers and boys on the road and in cars. The situation in the public buses is more harass-able"*. Almost More than 70% of male and female believe that traffic congestion makes pedestrians and cyclists to feel unsafe. Haroon, 32-year-old, a banker explained, "*The drivers are very reckless and they drive at high speeds. Sometimes they even block the sidewalks and the bike lanes. I think that the city of Kabul is very disorderly, the rights of pedestrians and cyclists are not respected. Sidewalks are very dangerous for pedestrians and cyclists"*.

The table presents, it is almost 90% female and 73% male are explained that the traffic congestion will makes families to worries about their family members and children that are coming late. Around 50%male and 45%female comments, traffic congestion increasing vehicle operation cost for drivers. Abdul Manan 48-year-old, a Taxi Driver expressed, *"I drive the taxi every day from the morning up to night, but because of the heavy traffic, I cannot make money, but i just earn the car expenses money (refuel and car repairing expanses) not any more"*.

Table-4. The negative impacts of traffic jam in Kabul city.

Major		Quantity		Percentage		
Characteristic	**Variable**	**Male**	**female**	**Male**	**female**	**Mean**
Social Impact	Wasting Time to do daily activities	51	25	79.69	75.76	77.72
	Losing recreation time	49	19	76.56	57.58	67.07
	Delayed destination in emergencies situation	48	28	75.00	84.85	79.92
	Sexual harassment	25	29	39.06	87.88	63.47
	Pedestrian and cyclist feel unsafe	45	24	70.31	72.73	71.52
	Concern of Family from accident or occurring anything	47	30	73.44	90.91	82.17
	Increasing Vehicle operation cost	32	15	50.00	45.45	47.73
	Parents fear to send children to school	42	21	65.63	63.64	64.63
	Late to the work or school	35	10	54.69	30.30	42.50
Environmental impact	Air pollution	39	24	60.94	72.73	66.83
	Noise pollution	33	17	51.56	51.52	51.54
	Breathing problem	9	18	14.06	54.55	34.30
	Headache	18	12	28.13	36.36	32.24
	Tiredness	39	11	60.94	33.33	47.14
	Sweating	17	30	26.56	90.12	69.34
	Suffering from mental pressure	16	12	25.00	36.36	30.68
Health impacts	Eye Problem	24	24	37.50	72.73	55.11
	physical discomfort	32	21	50.00	63.64	56.82
	Hearing problem	5	4	7.81	12.12	9.97
Economical	Monetary Loses	46	13	65.71	37.14	51.43
Impacts	Losing job	31	7	44.29	20.00	32.14

Source: Field survey 2019.

The Table 4 shows about 65% male and 63% female believed that the traffic congestion resulted parents fear to send their children to the school. Late to the work or school is also another problem which is cause by the traffic congestion in the city. Ahmad, 34year-old, a shopkeeper state: *"I have a shop in Mandayee of Kabul city, my customers come to the shop at 8 AM, but I often open the shop at 9 or 10AM because of traffic congestion"*.

3.3.2. Environmental Impact

Today, air pollution in the world has become one of the major challenges that endanger the lives of humans and other creatures on Earth (Sarker, Rahman, Cao, & Xu, 2019). Air pollution occurs when large volumes of harmful particles or substances such as gases, particles, and biological molecules enter the Earth's atmosphere (Sarker.. 2019). According to the World Health Organization report in year 2014, just in 2012, there are 7 million premature deaths linked to air pollution in the world (WHO, 2014). Some previous study identified that when vehicles stop for a period of time and keep engine on, they will emit SOx, NOx much which are lighter than air but very dangerous for human health and can cause death (Cao, Sarker, & Sun, 2019; Hossin, Sarker, Xiaohua, & Frimpong, 2018; Sarker, Hossin, Hua, et al., 2018; Sarker, Hossin, Min, et al., 2018). Based on Environmental Policy Act (NEPA) report in 2009, due to polluted air almost 3000 people die every year in Kabul city. The table presents, it is about 72% of female and 66% of male blame traffic congestion as the main cause of air pollution, saying that congestion in Kabul has had a very negative impact on environmental pollution and has made the city's air completely polluted (Sarker, Wu, Shouse, & Ma, 2019). This contaminated environment has caused a variety of diseases among children and adults. Dr. Mansour, 39-year-old a Pediatrician staid, *"The climate in Kabul is heavily polluted. Most patients, especially children, are brought to the hospital daily, they are suffering from air pollution diseases"*.

Noise pollution is an unwanted wave that affects the activity of organisms (Shafi, Sarker, & Junrong, 2019) especially humans, in specific spatial and temporal conditions, and can cause numerous physical, mental, and especially auditory nerve disorders (Agyapong & Ojo, 2018). The noise pollution caused by traffic jams in Kabul is very annoying. As table shows it is around 51% male and female are suffering from the sound pollution. Abdul Malik, 24 years-old, a hospital Nurse said, *"You know that city drivers do not fully know where they are allowed to horn and where they are not allowed to horn. They even horn where they shouldn't horn. Personally, when I go to the work, I faced with this annoying behavior and makes me and others to feel uncomfortable and even leads verbal disputing and physical conflicts. And the traffic police are not serious about this behavior.*

3.3.3. Health Impacts

Impact on health include Breathing problems, headaches, eye irritation, mental stress, hearing problems, physical discomfort, hearing problem, sweating and others health problem (Nasrin, Sarker, & Huda, 2019) which cause by the traffic congestion in the Kabul city (Bian, Yuan, Kuang, & Wu, 2016). The traffic congestion some time even raises the passengers or driver's nerves and makes them ready for conflict and fighting. Sakhi Dad, 28 years-old, an engineer said: *"It is one year that i work in Kabul, I commuting by taxi every day, sometimes because of traffic congestion, our car waits for hours on the roads. You know the taxi are outdated and very old, even their AC are not working. Drivers often open the windshields and passengers breathing polluted air. It is two months that i suffering from respiratory problem"*.

3.3.4. Economic Impacts

The economic impact is also one of the issues that the traffic congestion in Kabul city has caused for dwell ever. Such as monetary losing and job losing. Ashuqullah, 45 years old a baker said: *"I worked in Iran for six years, then*

returned to Kabul. I bought a taxi for 5 hand-red thousand afghanis to work as a taxi driver, but unfortunately due to the overcrowded city of Kabul, during one-year driving I couldn't make money, so I decided to sell my vehicles at a very low price".

4. RECOMMENDATIONS FOR POLICY IMPLICATION

This study proposes the following traffic congestion solution system. This system will help to understand the existing problems regarding traffic congestion and probable solutions for solving the problems which can improve urban management (Figure 1).

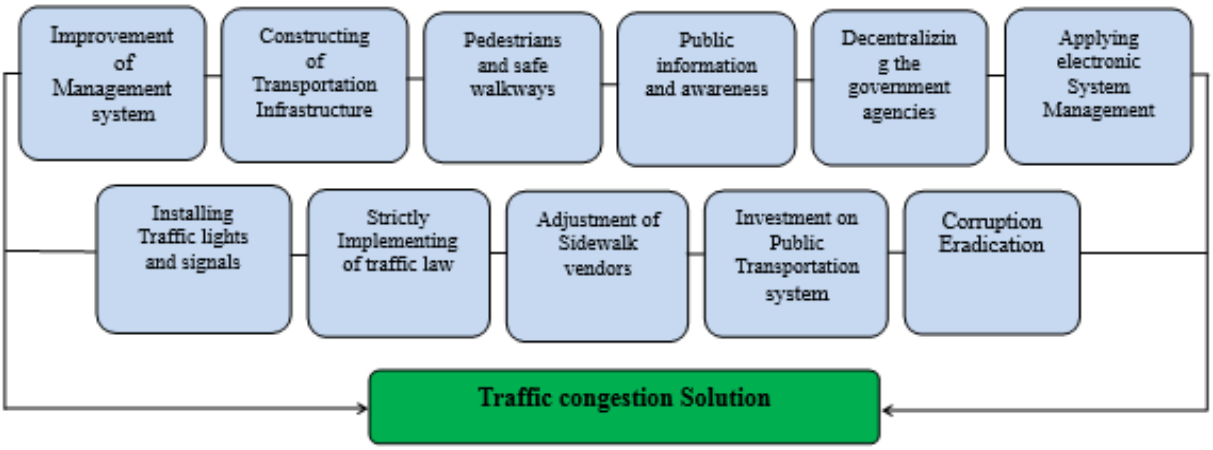

Figure-1. Traffic congestion solution system.

Source: Field survey 2019

a) Strengthening the construction of transportation infrastructure by designing separated roads and lanes for various vehicles, motor bike and pedestrians; Designing the traffic signals in some roads to properly guide drivers and pedestrians to their destination and installing traffic light in all intersections. Meanwhile, it is necessary to completely fill holes and reconstruct the roads to ensure smooth roads and avoid traffic accidents. The roads of remote areas should be paved asphalt to ensure comfortable travel in the city remote areas. Urban parking must be provided inside the city to prevent illegal parking on the roads. In addition, currently, due to the lack of terminal stations for buses and private vehicles, they often park along the road and load their passengers. To prevent passengers from being illegally loaded on the road - it is necessary to allocate some spaces to the terminal stations.

b) Strictly implement the traffic law. The law must apply to everyone equally and no one should be excluded from the rule of law. Traffic authorities should provide technical and vocational training for all drivers and strictly penalize those who violate traffic rules and if necessary, send to mandatory courses. By strictly enforcing the law, can reduce inappropriate behavior, restore traffic discipline in the city and effectively control traffic.

c) Increasing the number of buses in the city. Currently, the number of city buses in all parts of Kabul is inadequate, which makes people use their own private cars. By increasing the capacity urban buses in all parts of Kabul, can cause many people to use public buses instead of private vehicle.it can minimize traffic congestion and reduce environmental problems.

d) Decentralizing the government agencies and commercial center. Most of government agencies, foreign embassies and business centers are located on one area of Kabul. People due to their working and business commuting to these areas which is caused traffic congestion problems. Therefore, it is necessary to move part of the agencies and business centers to different areas of the city and to prevent the influx of people in one place.

e) Improve traffic management system ; for the Improvement of traffic system management it is requires a strong and committed team to monitor the drivers' behavior on the road, and strictly deal with any illegal driving behavior, such as: not having a driving license, overloading, illegal overtaking, speeding, running red light ,illegal parking, illegal turning, illegal horn, contraflow, drunk driving, and other illegal driving behaviors must be punished in accordance with the traffic law. Traffic measures must be legal and free from corruption. Meanwhile, to understand the regulation of driving, seminars in schools and Universities must be arranged for the students, and makes students familiar with the rules and regulations of driving. Also, to increase awareness of traffic laws, special programs related to traffic laws should be considered by the TV and radios.

f) Applying electronic system for traffic management. Currently, the vehicle licenses and driver's driving licenses are being distributed in handwritten mode. In order to prevent fake license vehicle activity in the city and prevent the issuance of a driving license for money, the Traffic Management department should activate electronic monitoring and controlling system as soon as possible. This control system can help us to reduce corruption at the traffic management levels.

5. CONCLUSION

Kabul city as capital of Afghanistan and big regional connection city has been suffering from the traffic congestion. This study intends to explore the relation between traffic congestion and urban dwellers selection current location for living, and also examine the causes and effects which exist behind traffic congestion in Kabul city. The study explores that there are branches of reasons such as shortage of urban infrastructure, improper human behavior, poor traffic management and demo-graphically problems which are causing traffic congestion in Kabul; as well the many issues such as social, environmental, economic and air pollution are resulted by the traffic congestion. To improve the situation of traffic system and decrease traffic congestion in Kabul. The government should improve management system to strictly implement the traffic law; as well constructing of transportation infrastructure such as road rehabilitation, traffic sign and signals, parking, pathway, overpass and underpass must be considered as a priority for traffic system improvement. For the decreasing city congestion, it is necessary to relocate some government agencies and embassies to different parts of the city for the corruption eradication and service facilitate government should apply electronic system management. It is very necessary that Afghan government organize some conferences related and invite international scholars for dialog and solve the solution. Kabul city strongly needs a Regular and comprehensive urban development plan and strategy to accommodate new immigrants and refugees in the city. The government must take some measure for public information and awareness regarding traffic law regulation to strengthen urbanization culture of city by applying seminars and classes at the schools, universities, and media. In addition, the number of buses should be increased in order to meet demand of city dweller.

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